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Fifteenth Century Craftsmen painting a House

The Planet Mercury—one of a series of Engravings of the Planets

Florentine School, c. 1470

JOURNAL OF THE
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Journal

The recent debate in the correspondence and leader columns of *The Times* on the Building Societies and the 1933 Housing Act is of very great importance, not least because it has shown again how definite is the opinion of independent authorities of the standing of *The Times* itself and the Building Industries' National Council, that the present Act, whatever its virtues, is clearly inadequate to assure the provision of houses for letting at low rents. Sir Enoch Hill, chairman of the Halifax Building Society, has made the claim, which he fully substantiates in the particular case of his own society, that the Act can be made to work and that the building societies can effectively make their contribution. Any satisfying generalisations that Sir Enoch or other supporters of the present housing provisions could draw from the admirable work of the Halifax Society fall short in two important respects which have been amply pointed out by *The Times* itself in its leaders and in particular by Mr. H. B. Bryant, the secretary of the Building Industries' National Council, in a letter from him published on 1 February, and are endorsed by a letter on another page of this JOURNAL from Mr. John G. Martin, the secretary of the National Housing and Town Planning Council. In the first place, for the Act to be proved effective, the public need to have assurance that not only one of the largest but that every building society in the country is prepared to operate it and that their efforts are succeeding. The undoubted success of the Halifax Society is encouraging, no doubt, but it only represents loans of about 1¼ million pounds, some large part of which is applied to the building of other types of houses than those most necessary.

The second and most fundamental criticism of the Act that can be based on Sir Enoch Hill's conclusions is directed at this proved inability to provide houses to let at rents within the means of the poorest tenants. On the evidence provided by a housing scheme promoted by Sir Enoch Hill and others, the lowest rent at which houses can be provided under the Act is 10s. inclusive of rates, "a type of house," Sir Enoch claims, "fitted as to kind and cost for the person who is most in need of a house to-day—the artisan." We quote the relevant paragraph from Mr. Bryant's letter in full.

"In fact, of course, the artisan is not the person most in need of a house to-day. The problem of housing is the problem of providing houses of a reasonable standard at a rent which can be paid by the mass of the working classes, whose earnings when in full-time employment are, according to the Ministry of Labour, about 50s. a week. It must be remembered that from this amount of £130 a year at least 25 per cent. must be deducted to allow for seasonal and casual unemployment, giving an average weekly wage of only 37s. 6d. a week. There is no doubt at all that the absolute maximum inclusive rental for these classes is 7s. 6d. a week. They cannot, without very grave sacrifice, afford to pay a rental of 10s. or 11s. a week, which represents nearly one-third of their income."

On page 369 we reprint, by permission, the whole of the leading article with which *The Times* summed up the discussion. It is not our concern to enter into polemical discussion on the respective merits of private enterprise or official housing. The most efficient scheme will make provision for the maximum *organised* use of both forms. The trouble at present is that there is almost no organisation at all. When it has been shown that, even as applied by persons of Sir Enoch Hill's ability and spirit, the best that the present Act can do is to provide houses at 10s. a week, it is surely time for the country to look about for an alternative policy likely to prove more effective.

The Franco-British Union of Architects has organised a competition between the advanced students of some twelve schools of architecture in this country and of the National School of Fine Arts of France, who will compete for the Eustache-Rougevin Prize, one of the most important tests in decorative composition at the Ecole des Beaux-Arts. The idea, of which this exhibition will be the first fruits, is to institute an annual contest in some problem of design between the young architects of Great Britain and France, and it is already proposed to extend the scope of this friendly rivalry next year by including another of the annual competitions of the Ecole des Beaux-Arts, which deals with the planning of large and important buildings of a monumental character.

The conditions which have been jointly agreed between the Director of the French National School and the Board

of Architectural Education of Great Britain provide for a joint competition on a programme set by the Ecole des Beaux-Arts. The Eustache-Rougevin Prize of the Ecole des Beaux-Arts, the programme of which will be the basis of this year's competition, is awarded annually to students in the "first" (or advanced) class of that school for a study in decorative composition executed in seven days from a programme set by the professors of the French National School. The competitors, in both England and in France, will work under the same conditions; on the first day between 9 a.m. and 9 p.m. they must produce a rough sketch *en loge*. During the rest of the week this rough sketch is elaborated in the School, and on the final day the competitors prepare their finished drawing in twelve hours working again *en loge*.

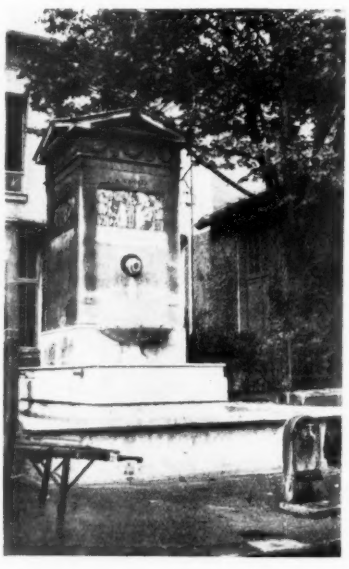
In England the designs will first be judged by the masters of each of the twelve schools concerned and the design placed first will then be sent to the R.I.B.A., where a special jury, composed of members of the Franco-British Union of Architects (many of whom are themselves old students of the Ecole des Beaux-Arts) and members of the Board of Architectural Education, will make an examination of the twelve drawings selected by the schools to determine their order of merit. A special medal will be awarded by the British and French sections of the F.-B.U.A. to the project placed first by the respective juries in each country. Finally, the twelve British designs will be sent to Paris and will be publicly exhibited with the selected French projects from 26 to 28 February, and the whole of the selected designs will also be on view at the R.I.B.A. Galleries in London from 7 to 14 March.

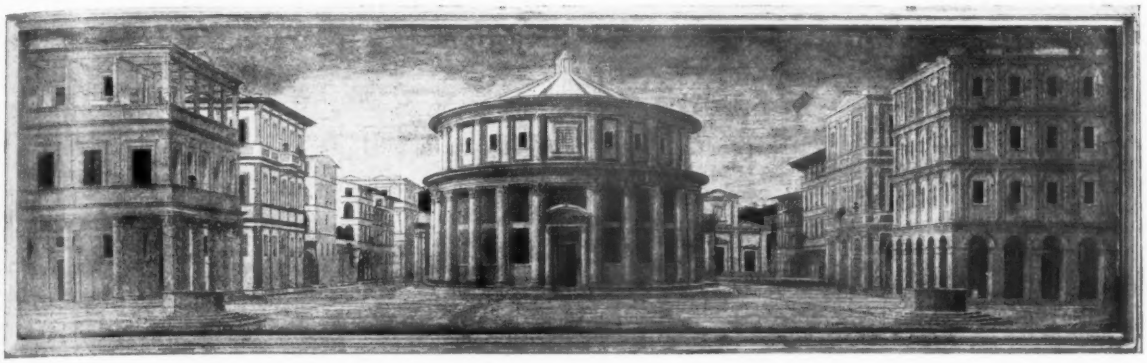
Before the meeting of the Council on Monday last, the presentation of an address was made to Sir Raymond Unwin from 191 members of the R.I.B.A. Council, the Standing Committees, the Architects' Benevolent Society Council and the Architects' Unemployment Committee during the sessions in which Sir Raymond was President. The wording of the address, which we hope to publish in the next number of the JOURNAL, was composed by Professor J. W. Mackail [*Hon. A.*] and written with the names of the donors in a vellum book by Mr. Graily Hewett.

Another very successful dance, organised by Mr. J. A. Slater and the R.I.B.A. Social Committee, was held in the Institute on the evening of Friday, 2 February. Over 150 people were present, all of whom appeared to be enjoying themselves very much. The next dance will be held on 16 March, and the Social Committee would be very grateful if members would apply for tickets and guest tickets early, and before the day of the dance if possible.

The addition of a new paragraph to Clause E of the Regulations for the conduct of architectural competitions has been found necessary because the original clause made no provision for cases where only a portion of the original scheme was proceeded with; although it was always intended that in such circumstances the fee of 1½ per cent. should apply to *any* work which was not carried out. Several cases have occurred where the promoters feel that if they proceeded with a portion of their scheme then Clause E did not apply. This would, of course, be most unfair to the profession, for example, if a public body invited designs for a large group of buildings consisting of, say, law courts, police station, swimming baths, etc., and then decided to abandon all except a house for the chief constable. The fees on the latter would obviously be insufficient to compensate the successful architect for his labour in designing the whole scheme. The new paragraph clearly sets forth the liabilities of the promoters in such circumstances.

The Chadwick Public Lecture on Rural Sanitation, by Mr. J. H. Coste, Chemist to the L.C.C., which we print in this JOURNAL, deals with one of the largest and most acute of the problems resulting from modern housing development. The countryside is becoming spotted with small houses and bungalows whose owners suffer from conflict between the townsman's sense of sanitation and the necessarily primitive conditions of the country and the erstwhile townsman not being immunised by long contact with rural conditions, is much more liable to become a victim of disease. Mr. Coste in his lecture sets out the main points of the problem and suggests remedies which should command attention. As an apposite and amusing contrast of standards past and present Mr. Coste has sent us the following photograph of a village conduit —old and new. What would Pugin have said?





SCHOOL OF PIERO DELLA FRANCESCA. Perspective View, in the Ducal Palace, Urbino

ARCHITECTURAL BACKGROUNDS IN RENAISSANCE PICTURES

BY KENNETH M. CLARK, M.A., HON. A.R.I.B.A.

A PAPER READ BEFORE THE ROYAL INSTITUTE OF BRITISH ARCHITECTS ON MONDAY, 5 FEBRUARY 1934, THE PRESIDENT (SIR GILES GILBERT SCOTT, R.A.) IN THE CHAIR

I SUPPOSE that we all agree in attaching great importance, both historical and æsthetic, to Italian renaissance architecture. Yet when we come to think of them, how few and how extraordinarily incomplete are the buildings in this style! There are not half a dozen which are finished, inside and out, as their makers intended, and almost all have suffered changes and defacements. Moreover, it was not an age of prodigal building, such, for example, as the age of Sixtus V, or that of Bernini, and it is surprising how little architecture can be associated with such a great name as Alberti or Laurana. We cannot make the history of early Renaissance architecture coherent, because important links in a chain of development often took the form of drawings and plans never carried out and long since lost. It was Jacob Burckhardt, the greatest of all students of the Renaissance, who first suggested that the study of fifteenth century architecture must be supplemented by the evidence of backgrounds. Strangely enough his suggestion has never been followed up, and the short paper which I am reading to-night is only a faint shadow of the possibilities which the subject might offer, and which I hope some day to explore.

For our present purpose backgrounds can be considered under two heads: those in which the painter's intention was realistic, and those in which it was æsthetic. The former class arose from the fact that a few of the familiar sacred subjects gave an excuse for a scene of *genre* taking place in an architectural setting. Such, for example, were the birth of the Virgin, the Annunciation, and St. Jerome in his study. Owing to the practice, universal before the time of Raphael, of representing sacred history in contemporary costumes and surroundings, these interiors show us, as nothing else can, exactly what the interior of a Renaissance house was like. They are, of course, chiefly valuable to students of furniture and decoration, but they also reveal a few facts which may be of interest to architects. For example, they give us evidence of the severely architectural use then made of what we call fitted furniture. As far as I know no actual examples of such furniture survive, except in church sacristies; but there is no doubt that it was universal. I do not know exactly when loose furniture began to predominate; certainly very little from the fifteenth century has survived, and that little might well have been part of an architectural scheme. It is curious that we had to wait till the twentieth century to return to a form of furniture which is not only convenient but must always have been the delight of architects. The two examples which I will show you are both in the National Gallery and represent St. Jerome in study.

That by Catena might, apart from some typical Renaissance detail, be reproduced in any modern house. That by Antonello da Messina is more complicated, but not, I believe, entirely fanciful. It shows how the enormous rooms of the Renaissance were made usable, by erecting in the middle of them a sort of draught-proof, self-contained box.

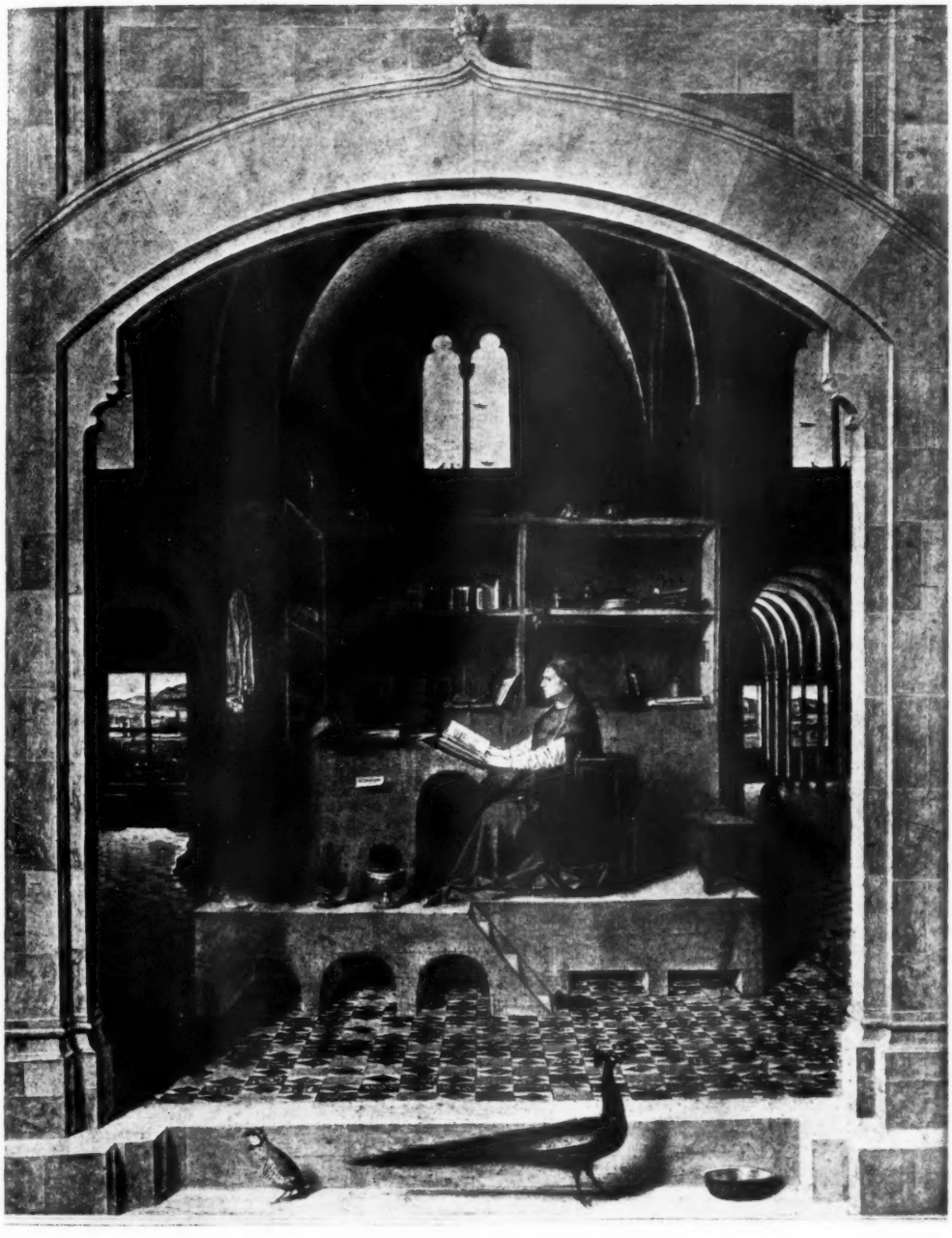
Another point which we learn from studying these realistic architectural backgrounds is the prevalence of painted decorations on the outside of houses. In the Renaissance the appearance of a town like Florence must have been very much less grim than it is to-day, must in fact have been not unlike the background of this fresco by Benozzo Gozzoli in the Campo Santo at Pisa, which shows every house covered with sham marbling and garlands. In order to prove to you that these garlands and pilasters really were painted on and not intended by Benozzo to be in stone or marble, I will show you this engraving, one of a series of the planets, representing the Planet Mercury, the patron of artists. In it you will see the house-painters at work, putting on this universal form of architectural decoration. Early in the sixteenth century the painted decorations on the exteriors of houses became far more elaborate until the outsides of important houses were covered with scenes in fresco as highly wrought as those in the interior. It is a curious comment on our ignorance of many sides of Renaissance art that hardly a single specimen of this universally popular and important art has come down to us. And of Polidoro Caravaggio, once the most esteemed and prolific decorator of the outsides of houses, hardly any work has survived.

Let me come to the second and more important division of my subject: that in which the painter introduced an architectural background not because the nature of his subject demanded it but as a mode of artistic expression.

You will remember that in the Renaissance these architectural backgrounds had a direct relation with actual building, because almost all the painters and sculptors in whose work they appear were themselves architects. Giotto, Raphael, Michelangelo were practising architects. Ghiberti was co-architect of the Duomo in Florence ; Donatello in his cantorie produced what we should call works of architecture, and when we come to such men as Michelozzo and Francesco di Giorgio, we do not know whether to call them architects or sculptors. Conversely, Brunellesco was a sculptor and Bramante a painter. Even such a pure painter as Botticelli was called in to give judgments on architectural problems. Architectural backgrounds, therefore, are not the work of mere dilettanti, and are not used for their picturesque effectiveness alone, but often represent real strivings for an architectural expression, denied in actual construction. They are dream buildings, embodying the deep romanticism of the time.

Two motives in particular lead to the introduction of architecture into painting: perspective and the antique, those two great artistic discoveries of the Italian Renaissance separate Italian art from the revived art of the north. Of the Renaissance passion for the antique I need say little, since its influence on architecture is well known. It is apparent, in every slide I shall show you, because it was chiefly by introducing some passage of architecture into a picture that the artist could express his feeling for the antique and display his learning. Often enough this learning was undigested and pedantic ; but the feeling behind it had a glow which our more critical age can never recapture.

If few of us can share the passion for antiquity, fewer still can feel passionately about perspective. Yet if we are to understand the intention of these architectural backgrounds, we must think of perspective as the subject of an almost religious ecstasy. For, to the Renaissance perspective was not a drawing-master's trick, but the basis of an æsthetic. Now if one was asked to define in a sentence the ideals, architectural and pictorial of the early *quattrocento* one might begin to feel the way in some such sentence as this: "The representation of solid objects in correct and harmonious relation to one another." The important word is "harmonious." Renaissance æsthetic thought, like most Renaissance thought, was deeply coloured by a revival of Platonism, that is to say, it was founded on the idea of harmonies; of which the most analysable was mathematical harmony. The men of that time knew that Pythagoras had succeeded in relating the musical scale to mathematics—of stating, as it seemed to them, musical harmony in mathematical terms. But classical philosophy had found no means of reducing the relations of the visible world to a mathematical formula, and such a means was provided by the discovery of perspective. In an age when so many things once considered mysterious were being given a rational foundation and a systematic arrangement, there did not seem to be anything fantastic in the endeavour to give visual art the same chances of exact success as pre-Einsteinian mathematics. Now you can see at once that the painter who was bitten by this passionate science was almost bound to introduce architecture into his work, architecture



ANTONELLO DA MESSINA. ST. JEROME. NATIONAL GALLERY

MASACCIO. BIRTH PLATE. KAISER FRIEDRICH MUSEUM, BERLIN

being practically the only subject which permits elaborate effects of perspective without the distortion of appearances.

The first painter who turned the new discoveries to serious ends was Masaccio; and the architecture in his pictures is of the greatest interest because as Vasari tells us, he was taught perspective by Brunellesco, who was not only the first architect to understand the classical style but also the first student of scientific perspective. Vasari describes how in his delight at discovering a true method he drew the piazza of S. Giovanni with all the incrustations of black and white marble, diminishing them with a singular grace, and although none of Brunellesco's perspective designs have come down to us, I can show you a drawing made on the same principle, not very long after Brunellesco's time. It is, I believe, the only drawing of the kind which we have, but we know that such drawings were very common because they came to be used as part of the stock in trade of the Intarsiatore, the men who did the miraculous inlaid woodwork pictures in the choir stalls and sacristies of Renaissance Churches. A whole lecture might be given on the architecture in Intarsie alone, but unfortunately it is impossible to obtain good photographs of this work and I will only show you one example, that from the Palace of Urbino, which I shall refer to again. Vasari's statement that Masaccio was in perspective a pupil of Brunellesco is borne out by several of Masaccio's paintings. The earliest, I suppose, is the little Birth-plate, the scene of the Nativity, in the Kaiser Fried-

rich Museum in Berlin, and you will see at once that it is directly influenced by Brunellesco's first important non-Gothic building, the loggia of the Innocenti, begun in 1420 and completed in 1428. Masaccio died before the Innocenti was completed, but I think this picture is evidence that the arcades were finished before the rest of the building, because, although it is stylistically an early Masaccio, it must have been done from the building itself and not from Brunellesco's drawings, owing to the prominence of the tie-rods between the arches. You will also notice that he has misunderstood their function. In other respects he shows a very intelligent understanding of the new style. Brunellesco's style had, in fact, a quality which, we might have supposed, would make it particularly valuable to painters. It helped to solve one of the great problems of painting. By the use of pronounced contrasts of colour in the materials, it allowed the painter to reconcile depth with an attractive surface pattern. But, unfortunately, no Florentine, except Masaccio, seems to have taken advantage of this quality. Only thirty years later, when we come to Central Italy and the school which had its chief patrons in the Court of Urbino, do we find the pictorial effects of Brunellesco's architecture properly understood, and by then other forces have intervened —Alberti, and, as we shall see, Piero della Francesca.

The second example of Masaccio's architecture is his frescoe of the Trinity in S.ta Maria Novella, also derived from Brunellesco, and closely modelled on his Innocenti, but here the theory that Masaccio was working from Brunellesco's drawings is far more probable. Quite apart from the fact that this part of the Innocenti was probably not completed in Masaccio's lifetime, it seems to me almost inconceivable that a painter so young and so fully employed as Masaccio could have mastered the then unformulated science. For this vaulted chapel in which the scene takes place is based on an extremely complicated and absolutely accurate piece of mathematics. And if this suggests that Brunellesco may have drawn the architecture, so, paradoxically enough, does the fact that, though the details of the chapel are undoubtedly Brunelleschian, the whole effect is one which Masaccio could hardly have found in Brunellesco's completed architecture. In that there is always something light and elegant, but this fresco has a kind of gravity which reminds us immediately of Rome. Now at the time this was painted, Masaccio can hardly have been in Rome; but Brunellesco had spent years there and returned with his sketch books full of drawings of the antique, and at the back of his mind more sense of the weight and majesty of Roman architecture than the springtime taste of his age allowed. The narrower proportions of this arch, and the heavy cofferings of the vault come from a Roman tomb, now destroyed, but of which we have evidence in an early Renaissance architectural sketch-book in the Ambrosiana, to which Brunellesco has added the device of columns beside the pilasters, an invention of his own which does not, I believe, occur in the antique. The great importance of this at first sight uninteresting piece of architecture is that it gives us one more precious document for the understanding of Brunellesco's late style. A student of Renaissance architecture has recently pointed out that at the end of his life Brunellesco was able to realise a more grandiose and classical style of architecture, but that by ill luck practically every example of this late period has been destroyed or become invisible. Masaccio's frescoes prove that Brunellesco already had this late style in mind as early as 1427. Though it is not traceable in his architecture till at least ten years after this time.

In the instance I have shown you we see an architect influencing a painter and the painter only anticipating a later architectural style through the fact that he could execute the architect's design quicker than it could be built. In the next example which I shall show you, that of Ghiberti, I think there is no doubt that the artist invented his own architectural style and that it had a practical influence on architects. It is a curious fact that the earliest elaborate examples of architectural backgrounds are not to be found in painting but in sculpture—in those astonishing reliefs which, by a kind of perverse and defiant power, the Florentines made more pictorial than their paintings.

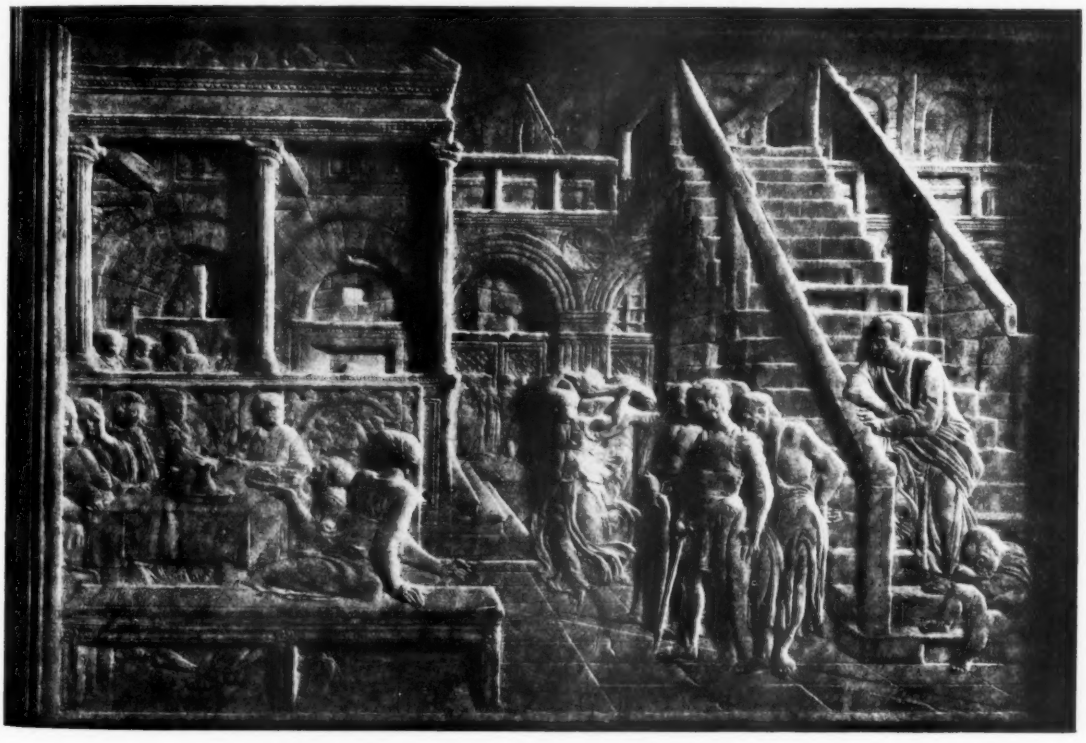
Ghiberti, like Masaccio, learnt perspective from Brunellesco, but his longer life and the greater knowledge of antique architecture allowed him to attempt far more complicated effects and to depart further from Brunelleschian models. From this time forward I should be inclined to say that the architecture in painting was in advance of anything which professional architects had carried out—by which I mean that it was more audacious, complicated and better acquainted with classical models. The reasons are obvious—for one thing, the painters had not to make their buildings stay up; for another, it only took a few weeks to paint a building and it sometimes took about ten years to build one, during which ten years knowledge of the antique and of methods of construction would have enormously increased. Above all, it was almost impossible for the architect to complete his work—funds gave out,

GHIBERTI. BAPTISTERY DOORS, FLORENCE

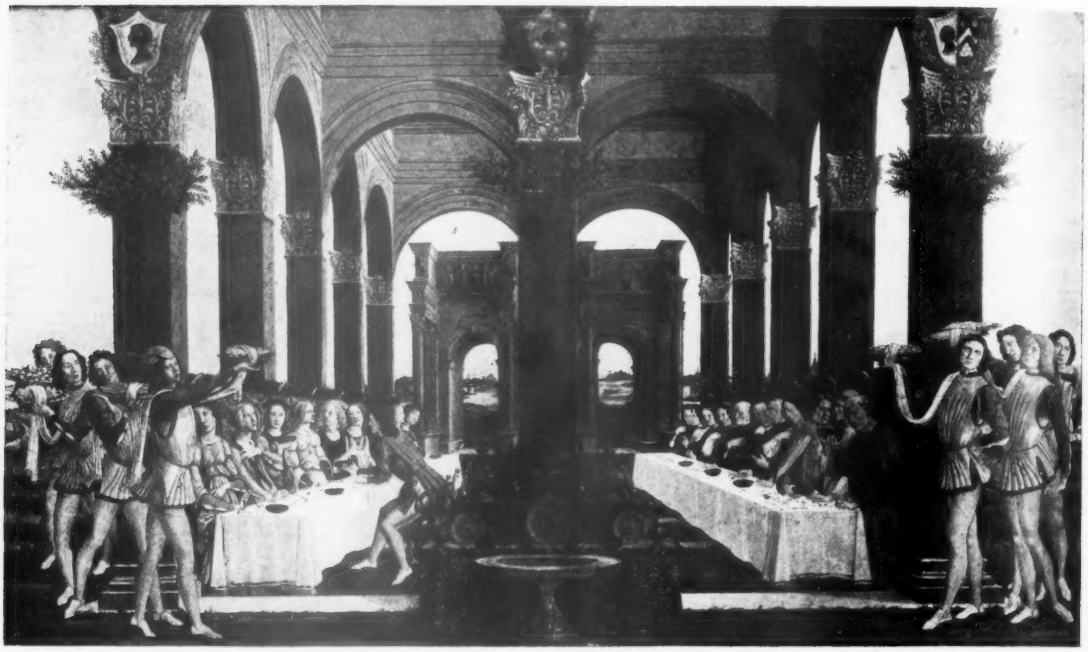
patrons died, builders struck, foremen quarrelled, local authorities objected. Perhaps this is why Alberti maintained that the architect should simply provide plans and never go near the building himself. Ghiberti's architecture is to be found in the second of his bronze doors. They were begun in 1425, and I think the following scenes must have been designed by 1435, though the great work of casting and chasing was not begun for another five years. This relief of Jacob and Esau shows a grace and an Attic simplicity which had certainly not been seen in any architecture before that date. It is quite unlike the late style of Brunellesco or that of Michelozzo and Alberti, and I do not think that it was realised till the early work of the elder San Gallo. Incidentally you will notice that it is a perfect illustration of the motives which I suggested led artists to introduce architectural backgrounds. It gives not only an antique air but a sense of the harmonious relation of planes. This relief of Joseph in Egypt is a beautiful example of the dream-architecture of the Renaissance, inspired no doubt by a Roman amphitheatre, but with a lightness and elegance which are very far from Roman. Here the effect of space is far more complex in its attempt to relate a broken diagonal with a circle.

This exquisite sense of spatial harmony rarely occurs in Florentine painting again. In fact, the artist who learnt most from Ghiberti's architectural backgrounds was not a Florentine, but the Umbrian, Perugino, who nevertheless learnt his art in Florence. Curiously enough, the only Florentine painter who seems to have understood Ghiberti's architecture was Botticelli. While other artists who felt bound to in-

troduce classical ruins into their backgrounds did so in order to display their learning with an accumulation of pedantry, Botticelli achieved something of Ghiberti's elegant distinction, as we can see in his early Tondo in the National Gallery. The most charming piece of Botticellian architecture is in a painting not from his own hand, but certainly executed on his design, of a Wedding Feast taking place, as you see, in the open air under an exquisite colonnade. Looking at it we can understand why Botticelli was appointed one of the judges for the design of the façade of the Duomo, and why he was mentioned by the greatest contemporary mathematician, Lucca Pacioli, as a master of perspective. This picture was painted almost fifty years after Ghiberti's death, and although it is full of Ghibertian inspiration in the rhythms and proportions it shows a more developed sense of classical detail, and the note of archæological pedantry is struck, though with a harmless remoteness, by the triumphal arch in the background. It used to be maintained that these capitals were copied from San Gallo's sacristy in Santo Spirito. Actually the sacristy was not begun till at least five years after this picture was painted, but this does not mean that Botticelli's design was altogether independent of San Gallo's inspiration, because he may very well have seen drawings for projects which were never carried out. We may even go further and say that certain books of architectural designs inspired by the antique were common property of the Florentine studios, so that motifs having a common source appeared in the work of artists of widely different schools. This, before the age of photography, was the only way by which the appetite for classical motifs could be satisfied. Several such books still exist (incidentally one of them is the work of San Gallo himself), and anyone seriously studying the subject of my lecture would find how much of our architectural backgrounds are taken from these standard works. I cannot say that their influence was good. On the contrary, they encouraged a parade of antiquarian learning. One of these books comes from the school of



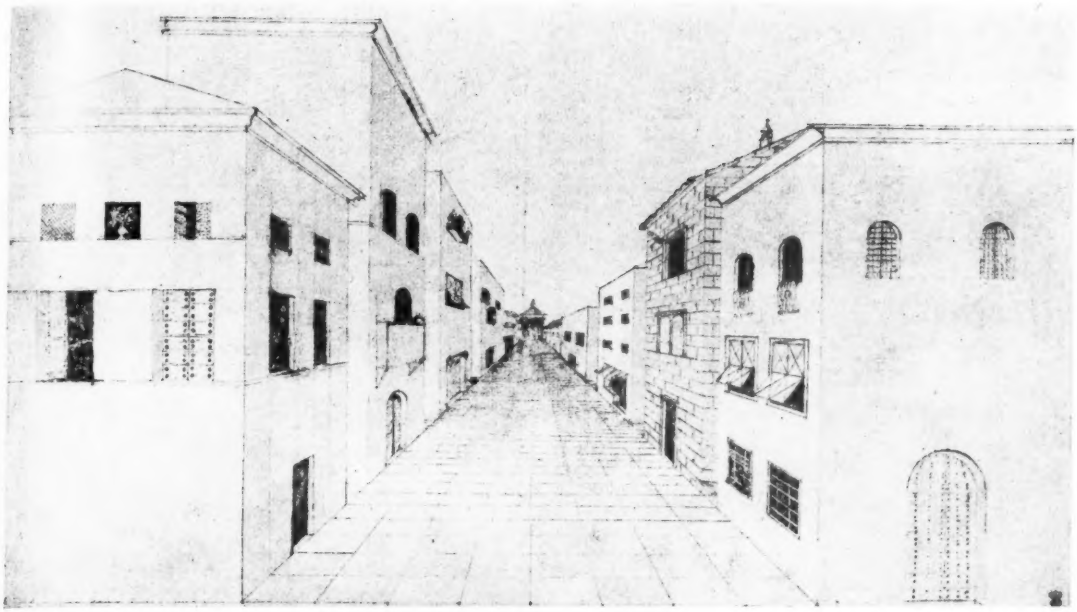
DONATELLO. THE DANCE OF SALOME (MARBLE). LILLE



THE WEDDING FEAST. Probably painted from a study by Botticelli

Ghirlandajo, and we see that this painter has made all too free a use of it, ruining his architectural backgrounds with a naïve accumulation of antique motifs.

The only artist who used an accumulation of antique motives with real imagination was Donatello. His architectural backgrounds are the most obviously striking of the whole Renaissance; nevertheless they are picturesque rather than architectural in feeling. The ruins of Rome did not impress on him the correctness of the classical style, but rather its vastness and variety. This is clearly seen by comparing his two reliefs of the dance of Salome, the Bronze at Siena having been done before, the Marble at Lille after, his long stay in Rome. In the post Roman relief he has introduced not only the detail of classical architecture, but also the prodigality and apparent inconsequence of Roman ruins. For a vision of classical architecture comparable to this in romantic audacity we must turn to Piranesi and the Carceri d'Invenzione. What a contrast to the elegant simplicity of Ghiberti! There are many other examples of this romanticism in Donatello's architecture; for example, this bronze relief of the Miracle of the Boy's Foot from the altar of S. Antonio at Padua, inspired by a Roman stadium. In another relief from the S. Antonio altar, the Miracle of the Ass, Donatello is more strictly architectural. This, at least, could have been built, though I believe it is more effective two dimensionally than three—the side arches not so much giving depth to the scene as looking like great horns of shadow carrying up the emphasis from the crowds and concentrating it on the miracle. The school of painting in which the architecture was most strongly influenced by Donatello's romantic vision of antiquity was that of Padua. It is a paradox of art history that this school, which was notoriously the most infatuated with antiquity, was of all Italian schools the least classical. It quoted, as a schoolboy quotes Aristotle, but it could not assimilate. The sources of its knowledge were in fact very unreliable. Here, for example, is a page from the sketch book of Marcanova, a man who had the greatest reputation as an antiquary. You will notice two things about it: first of all its barbarous lack of restraint, and, secondly, the fact that Marcanova, for all his learning, had made classical architecture look exactly like the minor architecture of the Renais-

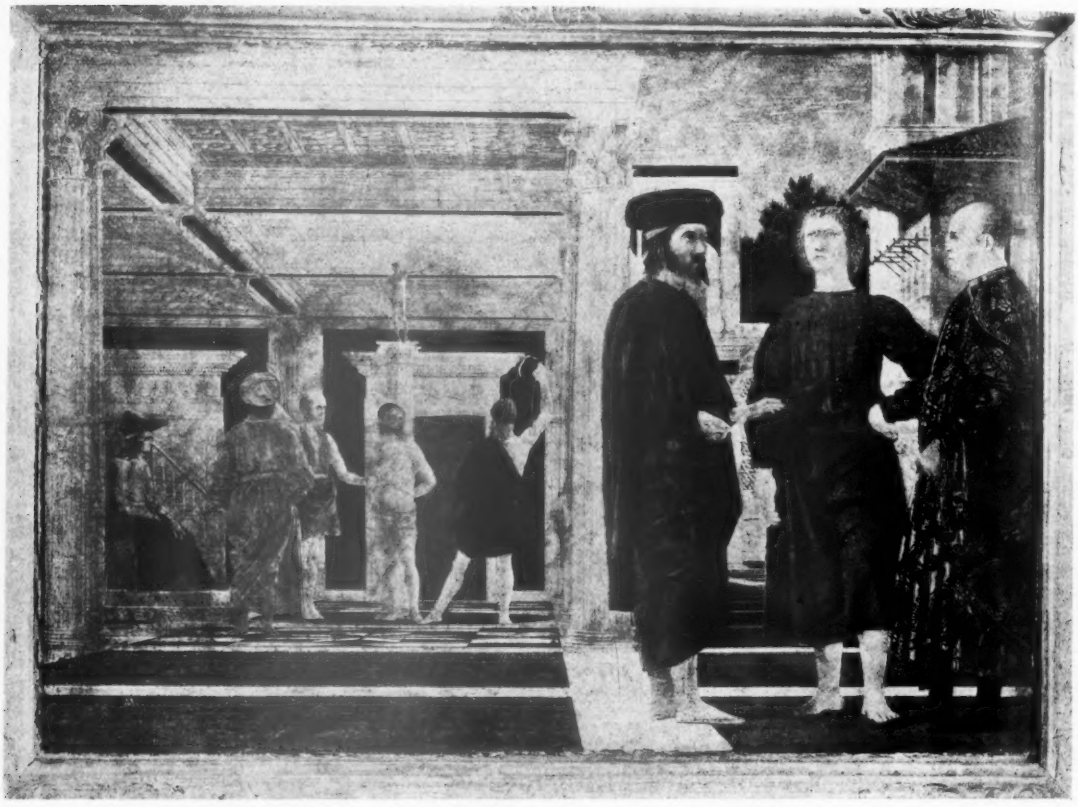


PERSPECTIVE OF A STREET. DRESDEN

sance. And this is a proof, I think, that the ordinary artists, sculptors and architects of the time must really have thought that their own creations were exactly like those of ancient Rome. Perhaps it is unfair to include architects under this head, for they usually have the sense to keep this over-laden ideal of the antique out of their buildings. But I must remind you how near they came to carrying out their romantic dreams by showing you a slide of the Casino Pio by an architect Pirro Ligorio, who proudly signed himself "Antiquario." This is, of course, a very much later work—actually as late as 1550. It is indeed almost the last example of romantic archæology before the dream of antiquity was clouded by the counter reformation. But it is nearer than any building I know to a material realisation of the commonplace classical architectural background.

I have perhaps dwelt too long on the antiquarian motive for architectural backgrounds; let me return to the other motive I suggested: the harmonious arrangement of space. Nowhere was this more perfectly realised than in Central Italy. Piero della Francesca, Perugino, Raphael, even that conscienceless populariser Pintoricchio—all had a love of spatial harmony far more strongly developed than that of their Florentine contemporaries, and their styles are more closely connected with contemporary architecture. The interweaving of pictorial and architectural influences in the sequence of these painters is so complicated that I cannot pretend to have unravelled the threads; and what follows is intended more to show the possibilities of my subject than as an historical conclusion.

Let me begin with Piero della Francesca, the perfect combination of the Umbrian with the Florentine spirit. Piero had the Umbrian sense of space and the Florentine love of mathematics; indeed, he was probably a more accomplished mathematician than any Florence had then produced, and his work in perspective is far the most profound of its century. He is the only painter of whom we can say that everything in his work is calculated—nothing is left to that happy chance which, so unjustly, usurps the title of inspiration. Now I think we can feel this before his Flagellation in the Urbino Gallery. To see the difference between mere perspective and a real feeling for spatial intervals, you have only to look at one of the numerous drawings of architecture in



PIERO DELLA FRANCESCA. THE FLAGELLATION OF CHRIST. URBINO

Jacopo Bellini's Sketch Book in the Louvre, which was probably executed after Piero's Flagellation. Jacopo Bellini certainly understood perspective, though most art historians have maintained the contrary. But you see to what insignificant uses he has put his knowledge. To him perspective is a pure trick and the motive of this interior is a childish delight in the fact of the vanish-point. Moreover, his building has no sort of architectural style. Now if we return to Piero's Flagellation we find that he has not simply been content with an effect of recession. Indeed, he seems almost to have achieved the aim which, as said at the beginning of this essay, was the philosopher's stone of early Florentine painting—he seems to have got an æsthetic effect by means of mathematics. And when we come to consider the actual style of the building, the result is equally impressive. Instead of Brunellesco's light, springy arches, or Donatello's classical incrustations, we have severe, fluted columns, heavy lintels, and this beautiful treatment of inlaid marbles by which Piero solves that pictorial problem I mentioned earlier—the combination of depth with pattern.

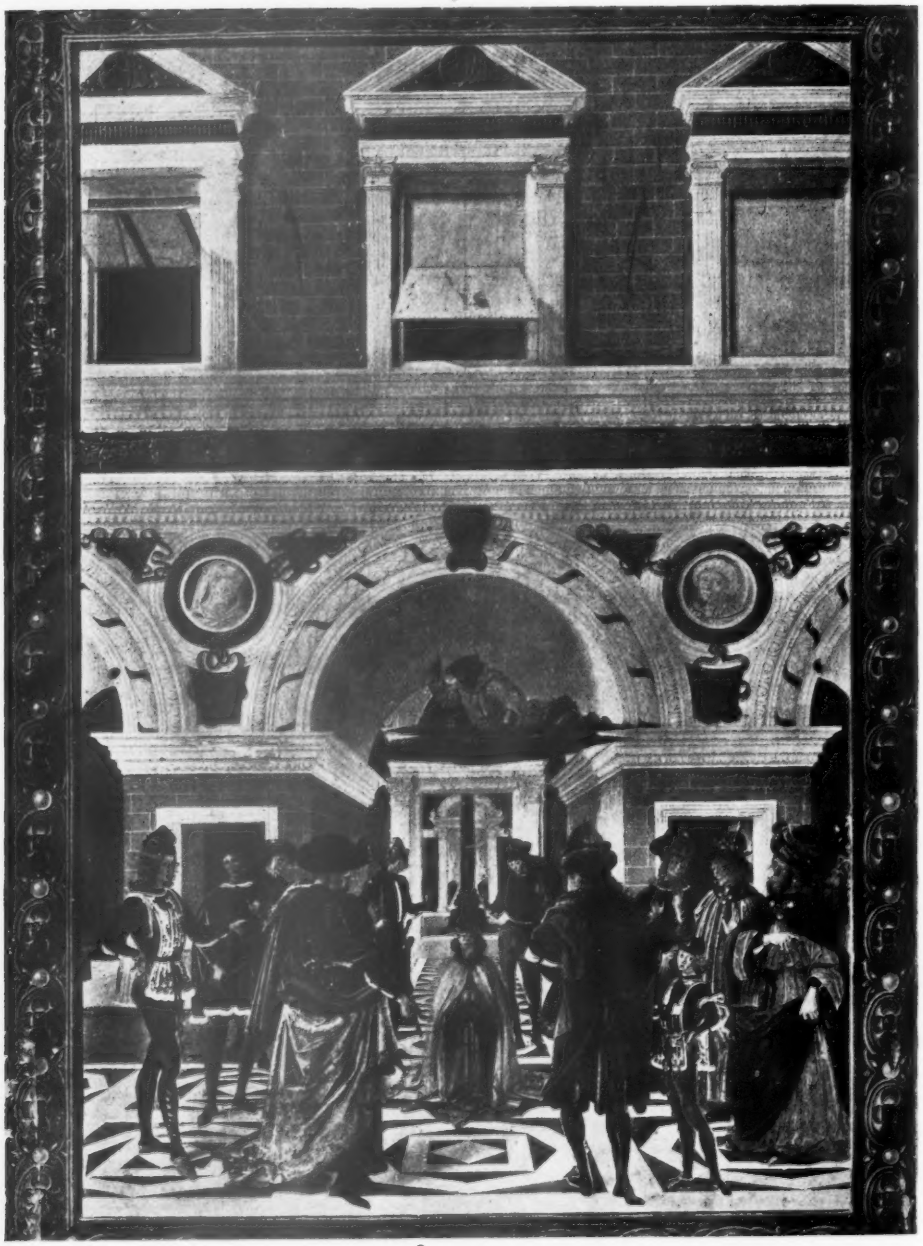
Where did this style come from? One answer will occur to all of you immediately: this is the style of Leon Battista Alberti. Here, in the façade of his Tempio at Rimini you see the same type of columns, same system of proportions, and the same marble inlays. To take another example, this palace of the Queen of Sheba, in Piero's fresco at Arezzo, is not only close to the Tempio, but resembles the facade of the Church of San Pancrazio in Florence. The whole feeling of Piero's architecture, so unlike any of the Florentine backgrounds, is extraordinarily Albertian.

Now Alberti's transformation of Tempio was de-

signed in 1446, and Piero was in Rimini in 1451 and actually painted a fresco in the Tempio. Of course, Alberti's alterations were not yet carried out; but there can be no doubt that Piero had seen his drawings, because his fresco of Malatesta in the Tempio shows an architectural motive exactly in the style of Alberti's work.

You notice I am assuming that Alberti influenced Piero. I could not, before such an audience, suggest that one of the greatest saints in your Calendar took his style from a painter. I might mention that Piero's Flagellation has hitherto been dated by all scholars from the year 1445—that is to say, before Piero was at Rimini, and before any single building of Alberti's was erected. But such a suggestion is impossible and I believe that the early dating of the Flagellation, which is only based on iconographical evidence, must be abandoned; and I would point to this as one of the many interesting side issues which our subject reveals.

Though there seems to be no doubt that Piero was influenced by Alberti, the general effect of his architectural style shows a difference of mood. It is, if I may so express it, brighter and finer, less massive and less vitruvian. It is a translation of Alberti and if we look at the Flagellation again we may remember that we meet this same translation of Alberti in the Palace of Urbino. The resemblance is too close to be accidental: for example, the doors have precisely the same proportions and the same relation to the wall; the surrounds have the same kind and amount of ornament and the same mouldings. In particular, the relation of marble or stone to brickwork is very similar, only in his paintings Piero, not being concerned with the expense of materials, puts marble and porphyry instead of brick. A great deal has been written about the style of Urbino, but we still remain perfectly ignorant of its origins. Luciano Laurana, who used to be reckoned its architect, did not start work on the Palace till after 1465, and we know that parts of the building in the same strongly marked style which runs through the whole Palace had been executed previous to his arrival. Now, whether or not this picture was painted in 1445, Piero's architectural style was certainly formed before 1460, and he had long been the leading artist of the Court of Urbino. I need not repeat that a Renaissance artist was not a mere painter, but a man who could be turned on to any kind of designing, and I am inclined to believe that it was Piero who gave the Palace of Urbino its peculiar style. His close connection with architecture is shown by the numerous painted views of ideal architecture which were produced by his workshop. These show such a knowledge of architectural design that they have even been attributed to Laurana himself, though we have no evidence that he ever painted. He was, in fact, no more than a military engineer and these pictures are in the style of Piero's other work. They are, as you see, developments of the drawing by Brunellesco referred to by Vasari which I mentioned at the beginning of the lecture. The one part of the Palace of Urbino which shows little relation to Piero is the arcading of the famous courtyard. Yet the one colonnade in Piero's work, that shown in the upper part of the Altarpiece in the Perugia Gallery, is closely related to the Urbino style. When in 1474 Laurana was dismissed and the post of chief architect was given to Francesco di Giorgio, the same style was continued and I think we may say that he, too, became the architectural disciple of Piero. He added, however, a certain decorative fantasy which was peculiarly Sienese. The series of paintings done for the Palace of Urbino in 1475 and now in the Perugia Gallery provide the link between Piero and Francesco di Giorgio. They were designed under the direction of one of Piero's pupils, Pietro Perugino, who executed two of them himself. You will see how close is this both in tone and style, to the work of Piero della Francesca, and you will see that it is extraordinarily similar to the façade of the Prefetura in Pesaro, a building which is generally attributed to Francesca di Giorgio. Later in life Perugino adopted a severer and less colouristic architectural style for his backgrounds, which I think owe a great deal to his study of Ghiberti made during his apprenticeship. In addition to the grace and spaciousness of the architecture in such a picture as his Triptych in the Casa Albani, Perugino seems to have developed a distinct architectural style, in which the vaulting is always supported by tall, thin piers, never columns, with curious stilted arches. As far as I know, this style was not adopted by any well-known architect, but I have found it used in several unimportant buildings in Umbria which date from Perugino's time. This style he handed on to the young Raphael, and in his Sposalizio we see Raphael before the intervention of Bramante keeping close to the Umbrian style of architecture. So through Perugino we get one line of connection between the architecture of the two greatest painters of Central Italy. By following a rather different line we find that Piero della Francesca gives us a direct connection between Alberti and Bramante. This link is provided by Piero's last great picture, the Madonna and Saints in the Brera, which is a perfect example of the Urbino style. I think it probable that the form of this niche is directly inspired by the apse of Alberti's church Sant



CENTRAL ITALIAN SCHOOL, 1475. MIRACOLO DI S. BERNARDINO
Painted for the Palace of Urbino, now at Perugia

PIERO DELLA FRANCESCA. THE MADONNA AND SAINTS. BRERA, MILAN

Andrea at Mantua, only, of course, Piero has immensely reduced the scale and has added this magnificent shell. And I think it most probable that this picture which was certainly known to the young Bramante, for it hung in one of the churches in Urbino, was the inspiration of some of his early architectural works, such, for example, as is foreshadowed in the well-known engraving of the interior of a church, signed by Bramante. Here, too, we have a tradition to support us, because Vasari tells

RAPHAEL. SCHOOL OF ATHENS. ROME

us that this picture was not entirely from Piero's hand, but was largely the work of a certain Fra Carnevale, and elsewhere in his Life of Bramante he says that the architectural backgrounds of Fra Carnevale's pictures were Bramante's earliest source of inspiration. Finally, I would point out what is no doubt familiar to you all, that we owe to Bramante the architecture of Raphael's School of Athens which, as you see, bears a remarkable direct resemblance to the Piero, which Bramante must have seen as a boy. Now I need not remind you that this magnificent building is the only satisfactory record we have of Bramante's design for the new St. Peter's.

This, then, is one point I have tried to make tonight, that the backgrounds of pictures are essential to complete our frustrated knowledge of Italian Renaissance architecture.

And I think our study of Piero has suggested another point, that architecture in painting is often in advance of constructed architecture and sometimes influences it.

Finally, we have seen how architectural backgrounds enabled the Italian painters of the early fifteenth century to express two of the deepest impulses of their time—romanticism and mathematics. Perhaps I have stressed that point too often, but I could not help repeating it before this fresco. The impassioned contemplation of Ancient Rome, the impassioned application of mathematical law never had a nobler result.

Vote of Thanks and Discussion

Sir GEORGE CLAUSEN, R.A.: Mr. President, ladies and gentlemen, it is with great pleasure that I will try to fulfil the honourable duty imposed on me by your President to propose a vote of thanks to Mr. Kenneth Clark for his most admirable and instructive Paper. We are all familiar with old paintings; we all know how, in the early paintings, the theme is brought together by buildings, but few, perhaps, have thought to study this as a connected subject, and I think we should be very grateful to Mr. Kenneth Clark for what he has told us to-night, for the way in which he has taken us through so many of the old works and made clear to us their bearing on architecture, which those of us who happen to be mere painters would have taken as a matter of course. We all know these things in the early paintings from Angelico. Some little scene is brought together by the buildings behind which the little action has taken place. And it always seems as if the action takes place naturally, as we might see things happening now in the street, and that the people performing the action are going about their business, much in the same way as people in the street would be now. I mean that the thing which comes through—speaking for myself alone and I suppose it comes to most of us—in these old pictures holds us, because we feel that in these pictures the painters have taken hold of life, the life of their time, and have put enough life into the theme to bring it down to us, with, of course, the beauty sense and the skill that they had. But it was a something which was not exotic; we cannot hope to tackle anything of the same kind to-day. Supposing we were to try? We know, from Evelyn's Diary when he went to Venice, how he saw the German Merchant House decorated with frescoes; it was done as a matter of course. We know that many other houses in Italy were decorated in the same way. If you want a corresponding thing to that to-day you will have to go to the great gas advertisements in Regent Street, which we see now. We cannot approach our work in the same simple way that the old painters did.

I cannot help thinking that Mr. Clark has rendered us a service in putting this series of things before us, which may remind us, perhaps, that we in our architecture, and perhaps also in our way of living, are straying a little bit from the path. Yet I do not know.

There is a matter which Mr. Kenneth Clark touched on, in his Paper, with some emphasis, and that is, the impulse that the invention, or the discovery, of perspective gave to art in the early days. That seems to me to mark the difference between the old literal rendering of the Byzantine and the modern representation. It is much the same difference, I think, that one finds between Oriental art or the art of the earliest times and the alter art. That is, the old men tried to describe, while the men at a later date tried to represent. The old men approached things from the point of view of a child who gives you the thing that is. Later on people began to see that the thing that is is not always the thing that appears. And the invention of perspective marks that point. It must have come back gradually. Vasari mentions how Pinturicchio discovered perspective. I give you the words: "Perspective which consisted in drawing in outline with the help of intersections." Of course he was followed by Uccello and Piero della Francesca, who was the greatest of the masters. There is this drawing in outline with the help of intersections, and it sets one contemplating. I cannot help thinking that at some time it must have occurred to someone who was trying to make a drawing that there was an imaginary picture plane, that is to say, that there was a plane surface between him and his object, and that if he could get the scene he was looking at on that surface, he would produce a true drawing. That idea, I think, has been followed up, and you can see that in old books on drawing, where the apparatus for drawing in that way by means of intersections is represented. That is a very interesting thing, and doubtless the earlier artists found out foreshortening in that way. In some cases a piece of glass was placed between the draughtsman and the object and there was a fixed eyepiece, and, by means of chalk, he drew the outline on the glass. In other cases he had a horizontal thing which he was drawing on, covered with squares; he had a vertical thing in front of him, wired with squares; he also had his fixed eyepiece, and he noted, by the intersections of these squares, where the different lines came. I think that is how perspective came to be discovered, and was eventually worked out in its formal way which we all had to go through as students.

But what I have been saying, sir, is a little bit off the track; what I really wanted to do, what I got up to do, was to help in expressing the thanks of this meeting to Mr. Clark for his paper, which, no doubt, will set a good many of us thinking. The point that he made about the early artist inventing his architecture, and architects afterwards copying it was, probably, a very strong point. The Italians had about them, all the time, odds and ends of what remained of the old civilization, and it was more or less built into their buildings. And the painter, when he was devising his picture, thought he would get a jolly result if he put an arch here, a column there, and so on. He copied it, and eventually made up some sort of building. And afterwards, I think, the hint was taken by men who were actually making use of the old elements for their buildings. So perhaps we mere painters had a little to do with it.

Once again, therefore, I ask you to give to Mr. Ken-

neth Clark a very hearty vote of thanks, and I hope one effect of the Paper will be that he will send us all to our history books to look up these obscure matters a little more in detail.

Mr. W. T. MONNINGTON, A.R.A.: Mr. President, ladies and gentlemen—It is a very great pleasure to have this opportunity of seconding Sir George Clausen's vote of thanks to Mr. Kenneth Clark for his paper, to which I have looked forward with pleasure ever since I knew that he was going to read it. It seems to me most extraordinary that we should always have taken such interest in Italian painting and architecture, considering that our painting has been such a very different matter all through. The great difference is, I think, that the Italian painters were intent upon constructing all the time and, in a sense, were architects; whereas it is obvious that English painters, for the most part, have been interested in the appearance of Nature, rather than in constructing ideas. Mr. Kenneth Clark's note about perspective is an explanation of all that, because understanding of perspective is necessary for the creation on a plane of a series of solid objects.

There is only one thing I wish to point out, and it is this. In a great number of the schools of painting in this country, students of painting are now given an opportunity, which they very much value and relish, of acquiring some understanding of the art of architecture. I have an idea that that may lead to some new developments in English painting, and turn the painter's interests from the appearance of Nature to the actual construction of something in his mind.

I do not want to take up more time now, and in any case I do not think I can add anything to the very interesting way in which Sir George Clausen has thanked Mr. Kenneth Clark for his most interesting paper.

The PRESIDENT: I do not want to take up your time, ladies and gentlemen, as I would like some of our distinguished guests and members to say a few words. But I cannot resist the temptation to say a word or two myself in appreciation of Mr. Kenneth Clark's paper. He has opened up several lines of thought which I would like to develop, but I must not to-night. One point which interested me was one we know very well: the extraordinary amalgamation of the arts of the time of the Italian Renaissance—I mean the fact that artists in those days were not confined to water-tight compartments and it was difficult to tell whether a man was an architect, a painter or a sculptor; all worked at several arts. And I think that is one of the weaknesses of our modern times : that we are too apt to run our arts in water-tight compartments.

Another point which interested me among those which Mr. Kenneth Clark raised was the way artists of that time regarded perspective. Mr. Clark says: "The men of that time knew that Pythagoras had succeeded in relating the musical scale to mathematics—of stating, as it seemed to them, musical harmony in mathematical terms." So he goes on explaining what is characteristic of our modern times, the curious inclination of artists to fly to science. Why it should be so I do not know; whether the human brain is more constructed for scientific thought than for artistic thought I cannot say, but we always, especially in times of lack of appreciation of art, fly to science. You find in all the later periods of artistic development that, lacking the inspiring influence in art, people flew to science for formulæ in which they could express themselves. That is an interesting feature of modern times; we have gone to the machine for inspiration, and that is science, for modernist design. Italian Renaissance painters apparently flew to the science of perspective to enable them to give visual art the same chances of exact success as the pre-Einstein mathematics. I think that a true use of perspective in painting is not necessarily the best thing for decorative painting. It is decorative painting which interests me, as an architect, more than any other aspect. I think a true use of perspective prevents the decorative painter giving a true sense of decoration; he may go too much for the third dimension. He should give width and height, and not too much depth. In other words, this work should not develop the third dimension. This feeling of depth is an enemy of true decorative work.

But I must not detain you. The vote of thanks having been moved and seconded, I invite members or guests to take part in the discussion. I shall be glad if anyone who has anything to contribute will speak without further invitation. And I ask speakers to be as brief as possible and not to occupy more than five minutes.

Professor ROGER FRY : I talk too much, Mr. President. I thought I knew a good deal about these Italian pictures; I knew every one of them in a sense, but I was delighted when I realised that in this lecture I was learning a good deal more about them than I ever knew before. It gave me most intense pleasure and interest, because I had never before gone into the question of these architectural backgrounds, as to where they came from, and so on, and it is an extraordinary addition to my knowledge of these pictures. I was more than ever bowled over by them when I saw them again on the screen, and that makes me a little bit critical of your remarks, sir, about this question of depth and flatness. Surely the School of Athens is one of the sublimest pieces of decoration in the world? It is one essentially of depth. There is always a certain conflict between organisation in depth and organisation on the surface; but it is part of the artist's business, and his chief gain, to reconcile those two. And in the case of the School at Athens it seems to me that the reconciliation is marvellously complete. It is my belief that one of the defects of English painting is that English painters have never realised fully enough how important is construction in depth. We have always been too superficially decorative, too much interested in decoration pure and simple, not as the expression of ideas. And I should like to hope that if in the future we develop a school of decorative design, it will be based upon the models of the Italian masters,

constructed as they are tremendously in depth rather than—well, I think I had better not say!

Mr. BERESFORD PITE [*F.*]: I venture to suggest, sir, that the Sistine Chapel owes a little to perspective; Michael Angelo in his extraordinary use of perspective has given us a result which has enriched the world of art.

I should like, by the way, to express the thanks of most of us to *The Times* of this morning for that interesting illustration of a portion of Michael Angelo's "Last Judgment."

To come to the subject of the paper, it is extraordinarily interesting to find how Mr. Kenneth Clark begins to get personalities to work. If I might be critical for a moment, will he tell us the relative date of Brunellesco's Chapel of the Badia at Fiesole? for the reproduction of its proportions is obvious; and there is the same elongation of proportion in Brunellesco's use of the Orders in the inside of San Lorenzo. I do not know that the elongation can be imputed to Ghiberti; I think that Ghiberti derived it from Brunellesco.

It is difficult for us to realise the wonder of the new world of the Renaissance and with what enthusiasm Alberti, the dilettanti, philosopher and poet, rushed into the study of antiquity as an altogether new world, and then produced his ten great books on the more or less semi-mathematical treatment of art. That is very characteristic—imagination combined with science, a mathematical fury infusing his artistic soul. And we see it, of course, in the Temple at Rimini, in the curious architectural effects of the side chapels there.

My acquaintance with the Italian painters of the time will not allow me to make suggestions, but is Crevelli's work ignorant of perspective? Look at the fascinating way in which he piled up those backgrounds and features.

I do not know how far the consideration of Mr. Kenneth Clark has extended, but Bramante had a flair which the young architect feels to-day; his love of perspective, his idea of hugeness, and the art of drawing are very marked; his setting out of St. Peter's in perspective, for instance. This all had an effect.

If you consider the effect of the discovery of perspective on the imagination of the world, and add to that the enthusiasm for Roman antiquities, you get the material out of which these wonderful backgrounds were created. How we stand, in the present day, to these interesting subjects I do not know; but I cannot help believing that a very future generation, looking down upon our era, will impute much more to the discovery of photography in its effect on our current arts than we now realise. And that is where science comes in, it is where it has affected all our ideas of representation. The throwing away of perspective, and what you, sir, called decorative effect, is, I think, partly due to a reaction against photography. If we can get effects by photography, we, as artists, do not want them; we want a mode of expression which is not photographic or scientific. So we can go back to art before perspective was discovered, and label it "Decorative." I hope the word decorative will not stand as a description of that form of art which is ignorant of the great discovery of perspective.

But let me unite in what is the universal feeling of the meeting one of gratitude for the excellent paper, and for the delightfully graphic expression of the subject.

Mr. GEOFFREY WEBB: It seems to me that the function of a speaker on an occasion like this is to suggest—bearing in mind that the Lecturer will have some time at the end in which to reply—some amplification of the subject. But before I make my suggestion I would like to say how sorry I am that a man like Mr. Kenneth Clark, who started his life by writing a book on architecture, should now have devoted himself entirely to a study of the history of painting, a subject in a field which has been more than enough cultivated, whereas the field of architecture, particularly architecture in the fifteenth century, remains almost uncultivated. There is no adequate book on the Italian architecture of the fifteenth century. Yet we see one of the men who might have written such a work permanently fixed in the great National Institution which almost forbids him doing it—I hope I am not too gloomy in this—forbids him to approach the subject except when he takes a holiday and comes to this Institute.

What I wanted to say is, that Mr. Kenneth Clark's paper suggested that the passion for perspective, as a part of science, as a way of putting salt on the tail of visual appearances, which he showed us to be a motive force in the fifteenth century, was, as far as I can see, equally passionately believed in by the architects of the seventeenth century. When you try to find out the number of books which it was possible for the great masters in England in the seventeenth century to have read, you will find that the greater part of them are Dutch mathematical books on perspective. And then you come to Sir Christopher Wren himself—and here is a small point, in passing. The President has told us that when art was in a declining way it looked towards science. When Sir Christopher Wren took up architecture, he took it up as a scientist who was already well established in the eyes of the world, and I do not think that English art or architecture was in a declining state in 1665. But there is the other point: in the notes in the Parentalia there is the suggestion that the way to design is to continually make perspectives from every possible point of view. And there is no doubt that Wren insisted on the importance of perspective in design in architecture, the last proof being that in 1707 Pozzo's *Perspective* was translated into English, with elaborate plates. It was printed at Greenwich, and is prefaced by a commendatory letter signed by Christopher Wren, Vanbrugh and Hawksmoor. Perhaps Mr. Kenneth Clark may be able, in his reply, to give us a word on the influence of the passion for perspective on the later architecture of the sixteenth century. I am quite aware that he has already given us God's plenty, and that we have no right to expect more.

Mr. H. M. FLETCHER [*F.*]: We architects are a rapacious race, and when we get a paper so full of stuff as this is, we are inclined to ask what we can pinch from it. The sight of the wonderful series of pictures which he showed us confirmed me in my view, an idea I have long held, that these picture backgrounds are a most stimulating source for theatrical scenery. I was sorry he did not show us more examples of the more fantastic pictures of Italian Renaissance, such as those by Carpaccio, and the series of life by St. Bernardino. There was one picture shown—I do not know to whom the Lecturer attributed it—which was full of suggestion, largely because such things cannot be built. The defect of the Italian setting for Shakespeare's Plays is that the stuff is all so exact. You get perfect pictures of the Venetian canals, which, because they are so realistic, are thrown out of gear by the boards taking the place of the water. I do not know whether many of you have seen Palladio's Theatre at Vicenza. There is an elaborate façade with three streets going away from it, with the perspective exactly rendered, and it looks admirable and realistic until you get a friend to go behind the scenes and come down one of the streets. At his first entry you see he is about four times the height of the buildings. That does not matter in the fantastic setting, but it "gives the whole show away" when the setting is realistic. But these backgrounds of the pictorial order, because they are so unconstructable, take you away from the realm of realism to that of fantasy, and they are adapted to such settings because, however you look at them, they are fantastic. The designs are intended to be seen from one angle in the theatre, but from all other points the view is at sixes and sevens. I am not a frequent theatre-goer, but the only theatre I know which made use of that sort of design in England was for the production of Shakespeare's *Twelfth Night*, ten years ago, when Henry Ainley was Malvolio. There was an enchanting scene taken from that type of picture, with a porch and a very steep flight of steps; and the porch was carried out in absurd pinks, golds and purples. It was a misfortune, I think, that Mr. Kenneth Clark could not show us the colouring of some of those backgrounds, because they are unrelated to Nature and are very delightful. Another set, which was based on later work, equally fantastic, was Lovat Fraser's, for *The Beggar's Opera*, which gave one the spirit of the eighteenth century without being in the least realistic.

I wish to add my tribute to Mr. Kenneth Clark for his wonderful paper.

Professor RICHARDSON [*F.*]: As a mere architect, and also a visitor to every European art gallery, and a frequenter of the National Gallery and a purchaser of the picture postcards sold there, and the owner of a large picture by Andrea del Sarto, in which a small piece of architecture appears, I have listened with feelings of great excitement to Mr. Kenneth Clark's paper. And the lesson I draw from it is, that to-day, more than ever, there is need for the architect to study art and draughtsmanship. It is the lack of those in contemporary life which leads architects to express themselves by means of straight lines, and nothing more. You know, sir, it is time somebody said this sort of thing. That, I think, is the great lesson we have learned to-night by this very excellent lecture.

It would be impertinent for me to go over the ground, but I should like to break a lance with Mr. Kenneth Clark on some points. One is when Brunellesco found a means of dispensing with Ghiberti's services. And there are other things we can learn from the slides and the talk. One is Donatello's treatment of the arcades, and the introduction of the figures in the spandrils. Donatello's work anticipates Peruzzi's treatment of the spandrils by 70 years. There are also many other points.

My great purpose in rising is to speak of the humanising influence of draughtsmanship; the ability to conceive in three dimensions; but not by mathematical perspective. I like to think of the free perspective which knows no rules, the sort you can see round, that you can draw over; I like to think of the perspective of some of the modern buildings, of the facilities they offer to painters. If the architect would be content to leave plain surfaces alone and not worry them with chromium plating, and so on, but would invite painters to exercise their skill on them, we should have as a result a living and vital contemporary art.

I join in paying a compliment to the erudition of Mr. Geoffrey Webb and Professor Fry; those two gentlemen are doing more to stem the torrent of—call it what you like—than anybody else.

Mr. KENNETH CLARK, in reply: Mr. President, ladies and gentlemen, I cannot thank you enough for the reception you have given me. It is always rather a terrifying task for a layman to address architects, but your kind reception has conquered all my fears, which were considerable.

Sir George Clausen spoke about the picture plane and the flat piece of glass or network stretched in front of the painter, and that gives me a chance of saying something about this question of perspective, which seems to have taken on an unexpected prominence in the discussion. The Renaissance painters did not think of perspective purely as a mere trick, and that is the point I tried to make. They seemed to me, certainly in the case of Piero della Francesco, to regard it as a method of organising the position of their figures. I think both of them worked out their composition in a ground plan before realising them in a painting. They drew a plan in which the figures were seen from above, and placed them at intervals, which they worked out by ordinary rules of proportion.

I am grateful to Mr. Monnington for his understanding of what I meant when I spoke of the Italians as great constructors in their architectural backgrounds.

The President raised a number of points which are so controversial that, as his guest, I can hardly touch upon them. He said something which I venture to think he cannot have meant: that art only called in science when

it was in decline. As that sentence was spoken about the early fifteenth century, when art was more in the ascendant than in the whole history of the human race, I cannot help thinking that I have misinterpreted what he said.

As for Professor Fry, I have a feeling of deep gratification that I should have been able to teach him anything. Mr. Fry, in everything which has to do with the history of art, has been very largely my master, and for one to find one's master getting up and saying "You have taught me something" is an almost embarrassing experience.

Professor Beresford Pite challenged me on several points, especially in regard to my support of Ghiberti. He challenged me in regard to Badia di Fiesole, which incidentally is not supposed to be the work of Brunellesco, though it is worthy of him. It was built about 1440. The architecture of Ghiberti's backgrounds, which are not of very great importance, differ considerably from the style of Brunellesco. I cannot agree that Brunellesco and his school ever achieved the same slimness and height which would have been impracticable in construction, and they depended so much on the contrast of colour and materials that the two styles are not comparable. Sta Spirito, which is the most famous of Brunellesco's works, was completed after his death, and the part which is most Ghibertian is that done by Sangallo, who, as I said, was the architect most influenced by Brunellesco. San Lorenzo I feel is very different in perspective and in treatment. Still, after all, Ghiberti's architectural backgrounds are of relatively small importance, and I do not give them weight in comparison with the architectural background of Francesco, which I do believe to have great architectural, as well as pictoral, importance.

Professor Pite also spoke of Bramante, but unfortunately, owing to the forty minutes limit—which I exceeded by two minutes—I was not able to carry my paper as far as Bramante, except to show you one or two slides.

Nothing could have given me greater pleasure than Mr. Webb's remarks about my misdirection of my life. I agree with everything he said, and if I am granted time and life, I hope very much to return to writing about architecture. I have been trying for many years to write a book about Alberti, but, so far, it has only got as far as notes. I wish I could say something, as he urged me to do, about perspective in the seventeenth century, but I am afraid I know nothing about it.

Mr. Fletcher spoke about fantastic architecture, and, Heaven knows, it is a delightful subject. I tried this evening, as I was speaking to a body of architects, to limit myself to buildings which might conceivably have been executed, but it would have been as delightful to have spoken about buildings which could never have been executed, except in canvas and plaster. That is a subject in itself, going down to the designs of Bibiena and his contemporaries; it would be a splendid subject for a paper.

Finally, Professor Richardson brought up poor Ghiberti in order to knock him down. But, as I have said, I do not give much weight to those backgrounds, and I think Professor Richardson should not give too much weight to the rather prejudiced accounts in Vasari of the relations between Brunellesco and Ghiberti. Vasari got his account from Manetti, who was a pupil of Brunellesco; he and Ghiberti were co-workers, and naturally they quarrelled. Ghiberti left an account of their relations, in his *Commentarii*, and it gives a different point of view.

Donatello's figures in the spandrils I should have thought were inspired by the Arch of Titus; they were taken from the antique, out of numerous sketch-books of antique motifs, of which several exist. I hope that later on Professor Richardson will be so kind as to show me what the motif in Donatello's spandrils is, which anticipated architectural ornament by 70 years.

I can say no more than thank you for the very kind reception which you have given me.

The Lancet

FIG. 1.—A DESIGN BY THE AUTHOR FOR A "HYDRARIUM," OR VILLAGE WATER-HOUSE

RURAL SANITATION

BY J. H. COSTE, F.I.C., F.INST.P., CHIEF CHEMIST TO THE LONDON COUNTY COUNCIL

The following paper is a condensed version of the Chadwick Public Lecture delivered by the Author at the Institution of Mechanical Engineers on 5 December 1933

The efforts of pioneers, like Edwin Chadwick, have accustomed the dwellers in towns to a standard of sanitation which causes some shock when they spend a country holiday in an otherwise delightful farmhouse. They do not, even then, fully realise that the æsthetic discomforts, though the most obvious, are not the greatest disadvantages of rural sanitation, or rather, insanitation. Not only is the disposal of excreta unpleasant, but the system used is only too often a means of contaminating both food and drinking water. Even in country mansions where the advantages of water-borne sanitation are provided, the relations of sewage disposal and water supply may be more intimate than is pleasant or healthy. Institutions, including even hospitals, are not in all cases satisfactorily provided in this respect. In fact, rural conditions are, and always have been, far from satisfactory. In the past, disease was accepted as an inevitable thing and was not attributed to any removable cause, and in many districts the native inhabitants probably acquired some immunity. Casual visitors might attribute intestinal attacks to over indulgence in fruit, or other country delicacies, rather than to defective sanitation; in any case, they usually died elsewhere than at the seat of infection.

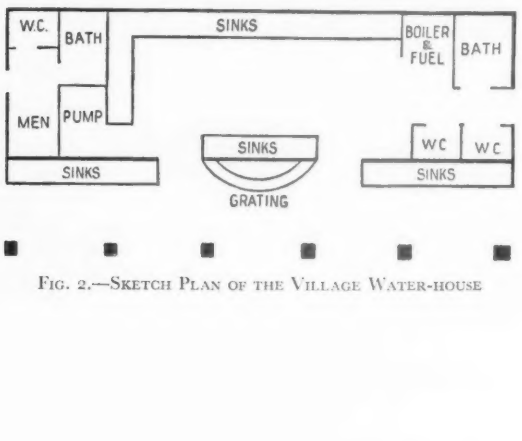


FIG. 2.—SKETCH PLAN OF THE VILLAGE WATER-HOUSE

The problem of sanitation in thinly populated districts, where a system of main drainage cannot possibly be developed until the population has so greatly increased as entirely to alter their rural character, is a very difficult one; individual houses or groups of houses must be provided for in some way, if life in such districts is to be made reasonably safe. Safety must include a due regard for the health of neighbours as well as that of the community directly concerned.

Considerations of convenience require that both the place of easement and the water supply should be within a very small distance of the actual dwelling and consequently of one another, whilst the primitive character of the former in the humbler establishments has usually necessitated its being situated outside the house, a not very convenient arrangement. The arrangement requiring least attention, and consequently causing least obvious unpleasantness was a fairly deep and leaky pit in permeable soil with suitable surface fittings and shelter from the elements. A rather deeper pit served as a well for collecting the water needed for the establishment and in doing so necessarily received contributions from the other appliance, more particularly if a separate soak-away was not provided for wash water. This intimate circulatory system is by no means extinct in England at the present day. It exists in a more elaborate form in large establishments, and the following case of a house where Queen Victoria had visited came under my notice a few years ago. The combined sewage of the man-

sion passed through a series of cesspools which, I was told, *never needed emptying*, dug in the chalk on a sloping site and overflowing one into the other. The water for the establishment was derived from a deep well in the same chalk, and certain anomalies in the results of analysis led to an inspection which revealed the above facts. The house, which had been uninhabited for some time, was subsequently connected with the public water supply, when the drainage from the cesspools no doubt found its way into some other water supply after having, it may be hoped, travelled long enough for complete purification to be effected.

THE REQUIREMENTS OF RURAL SANITATION

What are the requirements of rural sanitation in the restricted sense in which sanitation is usually understood? They seem to me to include:—

(1) A supply of water, unpolluted, or free from the ill-effects of pollution, sufficient in amount for all purposes of the community concerned, comprising drinking, cooking, washing of the person and of clothes and household fabrics, and for cleansing the house and domestic utensils.

(2) Provision for the disposal of waste water, resulting from household operations, without contaminating the water supply.

(3) Means of disposal of excreta, either alone or combined with (2), also without affecting the water supply or food of the community, in a manner which shall be inoffensive and not require undue attention.

As to the first requirement, it is only under exceptional circumstances that a community has settled in a place where there is not a water supply which is believed to be adequate for normal purposes. Some fortified places come under this category; but as they are hardly what is usually known as rural, they do not come within our purview. In the days when most of our English villages were established, the smallness of the population and its scattered nature reduced this need for water to one principally of amount rather than of quality, although from the earliest times special qualities were attributed to the water of certain localities.

For the second requirement, according to the system adopted for disposing of excreta, wash water may go to a soakaway or a combined system may deal with both wastes as sewage.

Unless the third requirement is fulfilled it cannot be truthfully said that there is any sanitation. On this point it must be remembered that the protection of food from flies, which may have come from excrement exposed to their visits, is as important as protection of the water supply. Hence earth closets represent the minimum safe means of disposal. Unless, however, they are provided with a proper supply of dried earth, which is renewed as used, they will become both offensive and dangerous; it should be the duty of some responsible person to see that this is done; then, and then only, do they form a satisfactory means of disposal of excreta. The earth, which must be periodically emptied, has some enhanced fertilising value.

Of recent years, both in England and France, "chemical" closets have come into some favour. In these excreta fall through a sealing layer of heavy mineral oil into a strong solution of caustic alkali in which solid matters are dissolved or dispersed. The method seems chemically sound, as excreta are sterilised, denatured, sealed from the air and from the visits of flies, and the contents of the tank may be emptied on to a waste patch of land without doing any real harm. The liquid must be still so caustic as to be dangerous to plant growth, and the mineral oil is an undesirable dressing for garden or arable soil. The upkeep is probably not costly, but they do not seem to me suited for permanent use in a continuously occupied house; they are, however, an important contribution to rural sanitation.

WATER SUPPLY

The amounts of water required per head vary according to the habits of the people concerned and are, naturally, much less in places where water closets have not been installed. The use of a 2 or 2½ gallon flushing cistern is clearly incompatible with a consumption of, say, 10 gallons per head per day. The following table is taken from a paper on "Rural Water Supplies," by Mr. T. Marsland, read at the Blackpool meeting of the British Waterworks Association, in June, 1933.

The following rates per head per day, excluding trade supplies and excessive waste, have been proved to be a fair average:—

Small villages and hamlets with stand tap supplies	5-10 gals.
Larger villages without the water carriage system	10-20 gals.
Larger villages with water carriage system	20-25 gals.
Residential villages on the fringe of towns	20-30 gals.
Larger residential districts	35 gals. and upwards

The requirements of small villages appear very modest, but the need for fetching water from a public stand tap or pumping from one's own well tend to induce an economy of water with which the townsman is unacquainted.

This question of rural water supply has received much notice in the press and the President of the Institution of Mechanical Engineers, Mr. Alan E. L. Chorlton, who is also a Member of Parliament, has been very active in the matter. His paper read recently at the Public Works, Roads and Transport Congress on Pooling of Supplies by interconnection of Water Undertakings, Regional Grids and Trunk Mains through Rural Areas evoked a very animated discussion, in which the representatives of the larger undertakings mainly called attention to the difficulties of his proposal, whilst delegates from rural districts stressed the need for something to be done, whether by grids from large trunk mains or by making the best use of the many sources of water with which this country

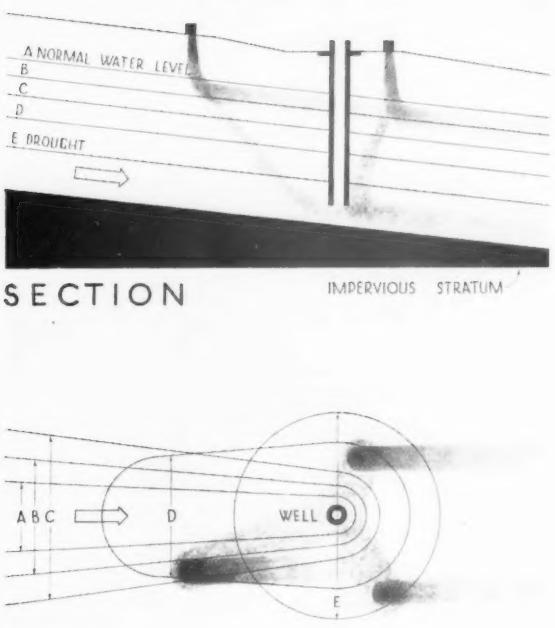


FIG. 3.—DIAGRAMMATIC SECTION AND PLAN, SHOWING HOW DROUGHT IS LIABLE TO CAUSE POLLUTION OF WELL WATER

still abounds, but which have been utilised rather with a view to the needs of the immediate vicinity than with regard to the wants of larger districts.

The Ministry of Health has recently devoted much attention to the important problem of rural water supplies. Early in the year a memorandum on this subject was issued and within the last week the Minister announced that considerable help in the way of grants would be given to assist authorities in grappling with the question. The possibility of a run of dry seasons is by no means remote and various outbreaks of disease have shown that the question of quality as well as that of quantity must be considered. It, therefore, is a matter that brooks no delay.

For many districts, I fear, a piped supply cannot be available for many years. But it is not unreasonable to suggest as an aim that in every village there should be a public stand tap, well or pump capable of giving at all times enough water of drinkable quality for drinking, washing of the person and house cleansing, with facilities for washing linen and clothes, at least as good as the washing places one sees at sides of streams in villages on the Continent. Also, wherever possible, a bathing place should be provided where children can learn to swim and those adults who care to can keep up this healthful exercise. Some opportunity for baths in winter does not seem unreasonable.

In view of the increasing popularity of swimming in England, it does seem that every place, however small, which is situated near a fairly clean river should provide facilities for swimming. A mere dam, with separate screened dressing accommodation for both sexes, and regular cutting of weeds would, in many cases, furnish all that is needed. Ponds are liable to become very unpleasant if the use is large, relative to their size, and baths worked on the fill and draw system are an abomination. The recent campaign for clean baths has done a great deal of good. The *Strandbaden* and floating baths on Continental rivers and bathing places on the Thames show what can be done at very little cost. Tank baths, unless filtration and chlorination are adopted, should not be erected.

The design of village water houses (Figs. 1 and 2), with the supply fountain and a summer washery under a colonnade and an enclosed winter washhouse and bathrooms, with heating apparatus, and, over all, a storage cistern, is worthy of the attention of local authorities. With such an establishment, and if people could be induced to use it, house-to-house distribution of water could be reduced to a minimum and the common supply could be treated to render it safe. We give purified water to armies in the field, but we do not trouble to see that these men and their children can get it in the land for which they fought.

POLLUTED WATER SUPPLIES

In many houses and institutions which have private water supplies yielding adequate amounts the quality is not always good or even safe, as has been found during the last summer. In arranging a new supply the present character and probable development of the surrounding land must be considered; the chosen supply should be submitted to both chemical and bacteriological examination, the former showing the past history and probability of future fluctuations, and the latter giving the present state as to contamination with sewage or polluted surface water. If the only available source is at all doubtful in character, chlorination seems to afford the simplest means of rendering it absolutely safe. For institutions chlorination, softening and, if needed, filtration present no real difficulties.

In the most difficult, and perhaps the most common, case the water can only be obtained from a shallow well, seldom a satisfactory source. A shallow well is merely a means of tapping the water which is either flowing as a continuous invisible tributary towards some stream at a lower level, which a map of the district will show, or is accumulating in a close basin among hills. In either case there will be some obvious direction of flow. The well may be considered, therefore, as drawing water mainly from the area up-stream, but as the level in it is lowered by pumping, the water all round it remaining at a higher level, begins to flow in from all

sides, but still mainly from up-stream. In times of low rainfall the underground stream slows down and the region contributing to the well more nearly approaches a circle, which represents the form of the collecting area in periods of absolute drought, if, indeed, the collecting area does not entirely disappear. The diagram (Fig. 3) shows the probable course of events. Clearly pollution is more likely to take place as the level of water in the soil falls and drainage that normally is carried forward and diffused is now brought, by pumping, into the collecting zone.

I think the only safe way of dealing with such supplies is, at least when the level in the well falls much below the normal, to sterilise. This sounds formidable, but if a large tank, or even a 5-gallon jar, is available, its capacity can be found and a simple dipping pipette and a supply of liquor sodæ chlorinatæ (B.P. 1914) in an amber-coloured stoppered bottle furnished by the local pharmacist.* Some water should be pumped into the tank, up to half its capacity if it is a metal one, then the required volume of chlorinated soda added and the tank filled. In half an hour after filling the water should be sterile, but it would be well to chlorinate overnight. If unpleasant tastes are developed, passing so much of the chlorinated water as is required for drinking through a simple sand filter with a layer of activated carbon will render it tasteless. (See table, Fig. 4.) Sterilisation by means of ozone offers some advantages over chlorination in establishments where the use of water is large enough to justify the cost of a suitable plant, especially when electricity is available or can easily be generated.

The well or other source of water should be upstream (relative to the flow of land water) of the house, and the arrangements for disposal of wastes of all kinds down-stream. The water from deep wells, springs or upland streams is less likely to need chlorination than that from shallow wells; but a county survey should be made, and wherever a water shows signs of pollution a formula for chlorination should be given on a form which could be taken to the pharmacist, who might find this service form a useful side-line more proper to his profession than the sale of lipstick or face powder.

SOAK-AWAYS FOR WASHING WATER

The small volume of water used in households where there is no piped water supply can be dealt with by a soak-away, but it must be so constructed that the water does really soak away and does not merely waterlog the foundations. Some sort of grease interceptor is desirable. This may take the form of a trap or even a small bale of straw at the outlet of a not too large drainpipe which carries the water a few feet from the house and discharges into a hole filled with loose brick rubbish, coke or clinker. Advantage should be taken of any natural fall of ground, and if the soil is heavy the distance from the house should be greater and the drainage provided be sufficient to ensure that water gets away. The planting of water-loving plants will afford a means of facilitating this, and may furnish a useful and ornamental screen. This matter should be looked into when buying or leasing a country residence. I knew of one where the bath discharged under the flooring, a fact which was only discovered after the house was taken.

Arrangements of the kinds already mentioned are only suitable where a high standard of civilised comfort is not considered. If the water supply is sufficient for a reasonable use of baths and the maintenance of modern household cleanliness, a combined system with water flushing

AMOUNTS OF LIQUOR SODÆ CHLORINATÆ (B.P. 1914) REQUIRED FOR CHLORINATING VARIOUS VOLUMES OF WATER TO THE EXTENT NAMED

Parts per million of chlorine.	The number of gallons of water shown in the columns below require the number of c.c.'s shown underneath.												
	10	20	30	40	50	60	70	80	90	100	200	500	1,000
0·1	0·2	0·4	0·5	0·7	0·9	1·1	1·3	1·4	1·6	1·8	3·6	9·0	18
0·2	0·4	0·8	1·1	1·4	1·8	2·2	2·5	2·9	3·2	3·6	7·2	18	36
0·3	0·5	0·1	1·6	2·2	2·7	3·2	3·8	4·3	4·9	5·4	11	27	54
0·4	0·7	1·4	2·2	2·7	3·6	4·3	5·1	5·7	6·5	7·2	15	36	72
0·5	0·9	1·6	2·7	3·6	4·5	5·4	6·4	7·2	8·0	9·0	18	45	90
0·6	1·1	2·2	3·2	4·3	5·4	6·5	7·5	8·6	9·7	11	22	54	109
0·7	1·3	2·6	3·8	5·1	6·3	7·6	8·9	10	11	13	25	63	127
0·8	1·4	2·8	4·3	5·6	7·2	8·6	10	11	13	14	29	72	145
0·9 ..	1·6	3·2	4·9	6·5	8·1	9·7	11	13	15	16	33	81	163
1·0	1·8	3·6	5·4	7·4	9·0	11	13	14	16	18	36	90	181

FIG. 4.

The amounts for other numbers of gallons can be found by multiplication. The volumes of "chloros" required can be found by dividing those in the Table by 4.

* "Chloros," which is four times as strong, may be used.

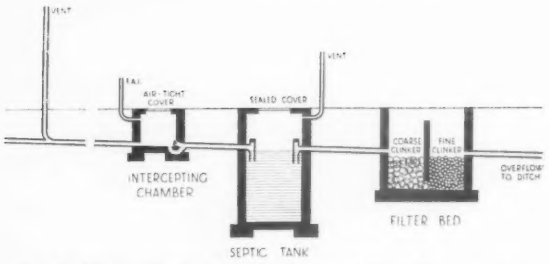


FIG. 5—DIAGRAMMATIC SECTION OF SEPTIC TANK INSTALLATION

for closets is without doubt most satisfactory. For institutions, especially hospitals, this is the only really satisfactory system, especially having regard to the large amount of washing necessary in such places and the risk of infection, if excreta are not immediately carried away.

THE BIOCHEMISTRY OF SANITATION

As the whole question of disposal of excreta and such waste matters is, apart from hydraulic engineering, one of chemistry or biochemistry, we may well pause to consider the chemical and biological nature of the matters we are dealing with, and the changes which it is desired to bring about in them.

Urine contains all those undesirable constitutents accumulated by the blood in its passage round the body which have been filtered out in the kidneys. Besides much common salt (sodium chloride) and some phosphate, it contains a large group of amino and amido bodies, with carbon, oxygen, hydrogen and nitrogen as their principal constituents. Although it is, when collected with proper precautions, a sterile fluid, except in certain morbid conditions of the bladder or urinary passages, it is a good culture medium for many bacteria, especially for those which can convert its nitrogenous constituents into ammonia. The fæces include all those matters in the food which will not yield to the action of the solvent agents and enzymes with which it has been treated in the upper parts of the alimentary canal, and in addition bodies contributed by the glands on the inner surface of the colon and vast numbers of bacteria, amounting to billions per head per day. The most prolific of these—*bacillus coli communis*—is so characteristic of excretal matter that its presence in water is used as the most delicate means of detecting sewage pollution.

SEWAGE PURIFICATION

Besides the constituents of urine and fæces sewage, contains soap, grease and other residues from domestic operations, with, approximately, the whole of the water used in the household. Domestic sewage from isolated houses or small groups of houses or institutions usually travels only a very short distance before reaching the treatment plant. Hence before any real treatment can be applied it is necessary to convert the liquid with coarse solids in it into a relatively homogeneous fluid like town sewage, which in passing through long sewers has undergone digestion, resulting in partial liquefaction of the coarser solids and their general dispersion throughout the liquid. This is usually done in "septic tanks," first consciously used at Exeter, by Cameron and Commin. In small installations near a dwelling it is best to use a covered tank, as these workers did, but the desired anærobic changes will go on in any tank which exposes a surface of liquid to the air which is small relative to its capacity. The inlet of the septic tank should be below the level of liquid it is intended to maintain, as also should the outlet on the opposite side, this latter being furnished with a siphon with a short leg outside so that the crust which forms on the surface of the liquid is undisturbed. If the tank is covered, it should have a ventilation pipe to remove gases formed during digestion as well as evil-smelling vapours into the air well above the level of any windows. In the septic tank some of the constituents of the sewage are gasified, the principal gas formed being methane or marsh gas, with carbon dioxide and nitrogen and some hydrogen. In separate digestion tanks for sewage sludge the constituents yielding gas seem to be the fatty acids of the soap, although it is known that cellulose will yield methane when fermented. In addition to gas formation some solids are brought into solution and others deposited at the bottom or buoyed to the top; but the accumulation of solids in the tank is slow, and they are much less offensive than those of the original sewage. The capacity should be equal to from one to three days' flow. The septicised sewage is now fit for treatment designed to purify it. This, to be effective, must entirely change its character from a turbid and rather foul-smelling liquid, full of bacteria and a favourable medium for their growth, into a clear one containing so little organic matter that surviving sewage bacteria may be in a moribund condition, rendered more so by the presence of highly oxidised compounds, or at least the absence of highly oxidisable ones. This may be done, and still is often done, by the simple and, under suitable conditions, effective process of land irrigation, or by the more intensive method of securing the same object, treatment in biological "filters," as they are still called, although the action in them is not strictly one of filtration nor only biological. It is, in fact, very complicated and is not by any means entirely due to the action of bacteria, which were formerly considered to be the sole agents of purification in such tanks or filters.

Ærobic purification of sewage, or, indeed, of any other organic matter, seems to be a combination of surface action on colloids—in the form of "humus" or "activated sludge"—causing the separation of matters from solution or quasi-solution, together with the simplification of other complicated organic matters during their passage through the alimentary tracts of protozoa and the oxidation of the simpler matters thus formed by the oxygen of the air through the agency of bacteria. We have, therefore, the biochemical life processes of animal and vegetable organisms and physio-chemical action all contributing to purification.

It is inadvisable to attempt land treatment on a heavy

soil, which is liable to become waterlogged; but if lightish land sloping away from a building standing in fair-sized grounds is available, this treatment may be advantageous. Septic or digestion tanks should be provided in duplicate and the overflow from these should flow well over the land, which should also be arranged for alternation of treatment. Suitable channels should be provided for distribution of the sewage and crops of rye-grass or other coarse fodder sown. The land must be well drained and should receive periodical dressings of lime. The lime content at any time should be enough for a sample of dried soil to effervesce when hydrochloric acid is poured on it.

The ratios of area irrigated to total irrigable area should be about 1 : 3 where land filtration, with drains, is used, and 1 : 5 for simple surface ("broad") irrigation. Still more land is needed for growing cereals and crops, for which sewage-treated soil is unsuitable, to make a working farm. The best soils worked in the best way may be suitable for 250 to 500 persons per acre of irrigable land and the worst hardly capable of dealing with sewage from 40 to 60 persons.

For small isolated houses and bungalows a simple combination of intercepting trap, septic tank and coarse and fine contact beds yields satisfactory results and needs very little attention; the septic tank seldom needs emptying or the beds renewing. Good clinker is a better material for the contact beds than the usual coke, which disintegrates rather more rapidly. The filter bed should be exposed to the air—it might be surrounded by a hedge—and such an installation has to my knowledge worked well for eighteen months and other similar ones for longer periods. The household in question is small, but full use is made of an abundant water supply.

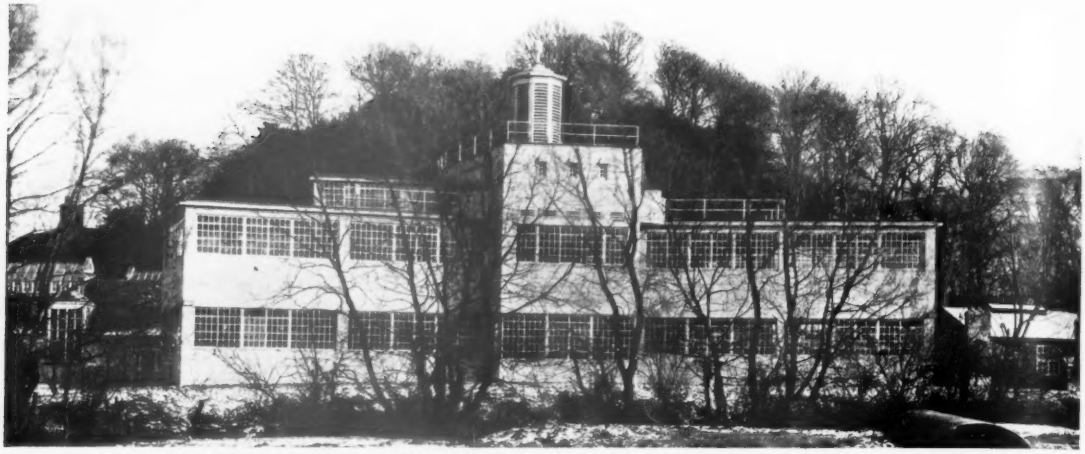
For institutions with, say, 200 or more inmates, the activated sludge process, which is really only a means of purifying sewage by biological means in tanks or channels instead of in "filter beds," has been found successful, especially possessing advantages where land is scarce. The plants are not complicated and are very compact. Further, there is no nuisance from smell. It is remarkable that this process has been adopted not only in India with its hot climate, but in Canada and some of the colder European countries, and found to yield good results in winter as well as in summer. Some of the smaller plants are arranged for remote control, which is convenient in institutions where the resident engineer has very varied duties to perform.

Those who wish to do anything to improve rural sanitation must realise two things : That the problem must be considered as a whole and that the best schemes can only be effective if they are worked with the will to succeed and with intelligence. Until the rustic mind wishes for a good water supply and clean disposal of excreta and other wastes and the bungaloid mind realises that a superficial imitation of the conditions which are only possible in towns by the skill of experts is not sanitation, no real progress will be made.

ADDENDUM

I have considered carefully how one should set about starting to live in a house without a piped supply of water. If there is an existing well, its relation to the existing means of disposal of excreta should be considered. If these are either at a higher level, at the point of discharge (or of the first point of leakage which is the real locus of discharge), or are nearer the well than, say, three times its depth, the well should be abandoned or the sewer lengthened to secure this minimum distance, and the abandoned sewage plant emptied and a good dose of chloride of lime added and the tank or cesspool filled up with water. The well should be examined, its surroundings cleaned, chloride of lime sprinkled over the ground around the well and, if the soundness of the casing is doubted, a good collar of concrete laid for, say, three feet around the well head, which should be fitted with a cover. The interior of the well should be examined, cleaned, made good where faulty, and then a volume of water at least equal to the volume standing in the well, which can be ascertained by considering it as a cylinder of known dimensions, pumped to waste and a sample taken in a clean bottle, which after cleansing has been several times filled and emptied from the well, and which is fitted with a stopper or a new well-fitting cork, and at once sent to an analyst, requesting him to say (1) if the water is fit for drinking without treatment, (2) if it could be made fit by chlorination, and (3) how many cubic centimetres of "chloros" containing 10 per cent., or of chlorinated soda (B.P. 1914) containing 2½ per cent. should be added to 100 gallons to leave a trace of free chlorine after 30 minutes of addition, and is the use of activated carbon necessary to remove taste, after chlorination?

An Ancient Public Lavoir in Var, France



A general view of the building from the west. The main entrance is at the left side from a courtyard adjacent to the Memorial Hall

SCIENCE BUILDINGS, MARLBOROUGH COLLEGE

Architects: W. G. Newton and Partners [FF.]

The building contains complete chemistry and biology departments with two lecture theatres and is for a public school of 750 boys. The cost per foot cube of the structure was 1s. 0½d., approximately half being the reinforced concrete structure and half general builders' work and services. The completely equipped building cost 1s. 4½d. per foot cube.

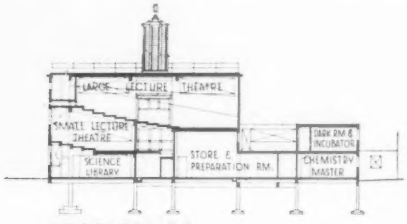
THE FOUNDATIONS

The site is on a flat valley bottom behind the Memorial Hall, built by the same architects in 1925, and close to the River Kennet. The pier foundation (see sections) was specially provided in order to meet the bad site conditions; a good bearing could only be obtained at a depth of 11 feet below surface and the ground was waterlogged. The hole for each pier was pumped dry, the reinforcement was placed and the concreting completed in one day.

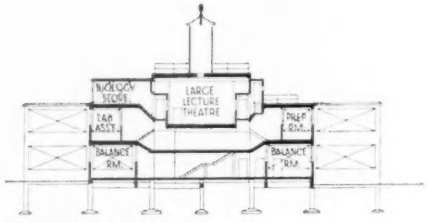
THE PLAN AND STRUCTURE

The building is in five units, separated by expansion joints, comprising the central block with back extension and the four laboratory wings. Strips of wallboard fill the expansion joints. The structure consists of posts supporting beams, which both serve as breast walls to windows and carry from their lower edges the Tee-beam floors (see isometric drawing on page 353). The ground floor is also carried on beams, there being no load on the surface of the soil.

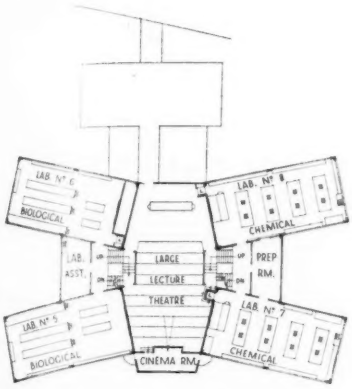
The plan is set out with pier centres at a spacing of 21 feet 6 inches, the horizontal dimensions of the laboratories being two of these units by one. This was adopted partly in order to permit re-use of formwork. The small lecture theatre is arranged under the rake of the large theatre (see section AA). The latter seats 108 boys and is equipped with a cinema projection room having apertures and space for three projectors. The plans reproduced on this page show the central placing of the store and preparation room, from which the three hand-operated lifts, communicating easily with all laboratories, are accessible.



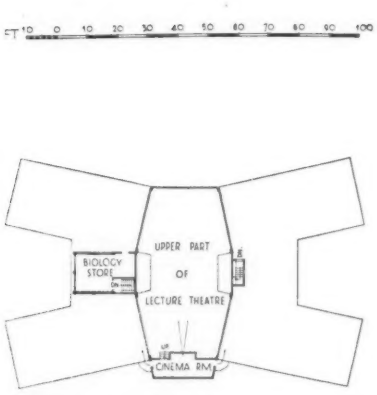
SECTION AA



SECTION BB

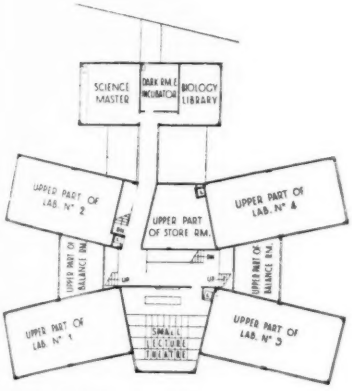


FIRST FLOOR

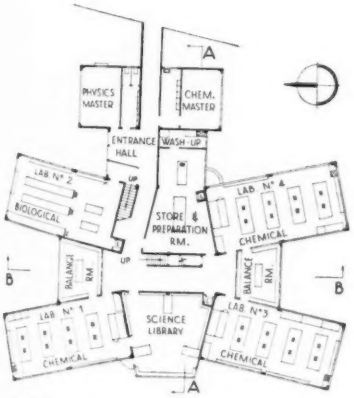


CLERESTORY & ROOF

The plan is set out to a pier spacing of 21 feet 6 inches, permitting considerable re-use of formwork. The laboratories are two of these units long and one wide; the rooms between the pairs of laboratories are also one unit long on the outer face


SCIENCE MASTER
DARK RM. & INCUBATOR
BIOLOGY LIBRARY
UPPER PART OF LAB. N° 2
UPPER PART OF STORE RM.
UPPER PART OF LAB. N° 4
UPPER PART OF BALANCE RM.
UPPER PART OF BALANCE RM.
UPPER PART OF LAB. N° 1
SMALL LECTURE THEATRE
UPPER PART OF LAB. N° 3

MEZZANINE FLOOR



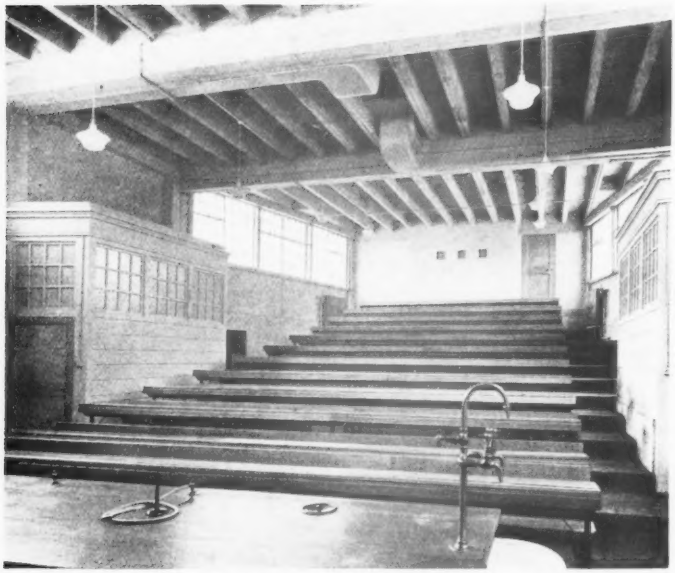
GROUND FLOOR

THE CONCRETE

The aggregate was an upper Thames valley pit gravel, light in colour. The cement was ordinary Portland with a small addition of coloured cement (Colourcrete). No waterproofer was used, the concrete being carefully graded to make it impervious. Formwork of the vertical faces was struck after three days and the external face brushed with a fibre brush. The panel walls are 5 inches thick, with small Vee-sectioned projections forming simple external decoration; these were made by chamfering the edges of shuttering boards. They also served to conceal the marks made by successive pourings of concrete.

The internal face consists of pre-cast slabs, 20 inches square, with an aggregate of broken stock brick and Portland stone, the surface being subsequently ground with a carborundum-faced mechanical disc (Flextol). These slabs acted as shuttering, being held in place by open battening. They are hard and smooth faced but porous, thus being hard wearing as well as absorbing surface condensation; nails can be driven into them;

The axonometric drawing on the right shows the form of the building, which has been built in five units, separated by expansion joints. These units comprise the central block with back extension and the four laboratory wings



The large lecture theatre seating 108 boys is equipped with a cinema projection room and light-tight blinds. The ceiling consists of the natural concrete left untreated. There is an extract ventilation system, heating being by radiators

A typical chemistry laboratory. The glass area is two-fifths of the floor area; the windows are of steel, side-pivot hung. The fittings are of British Columbian pine, finished with a clear cellulose glaze, except bench tops, which are of teak

they are also to some extent acoustically absorbent; the cost is about 1s. per yard more than that of timber shuttering.

STRUCTURAL FINISH AND EQUIPMENT

The windows are of steel, painted with aluminium paint and finished with a sprayed green. The glass area in each laboratory is about two-fifths of the floor area. Partitions are of sand-lime bricks flat-pointed, there being no internal plaster on walls, ceilings or piers. Floors, on the ground floor, are of teak blocks, on the first floor of Granwood blocks. Joinery both in doors and fittings is of British Columbian pine, finished with a clear cellulose glaze; bench tops are of teak.

Heating is by low pressure hot water and radiators. Pipes and wastes are exposed except where they cross floors, in which a slight rearrangement of the Tee-beam structure (see constructional isometric) allows wastes to be accommodated in the floor thickness. Externally, the wastes are picked up in lengths of glazed channel along the bases of the laboratory walls. Ventilation and fume cupboard ducts are in asbestos-cement tubing of rectangular section.

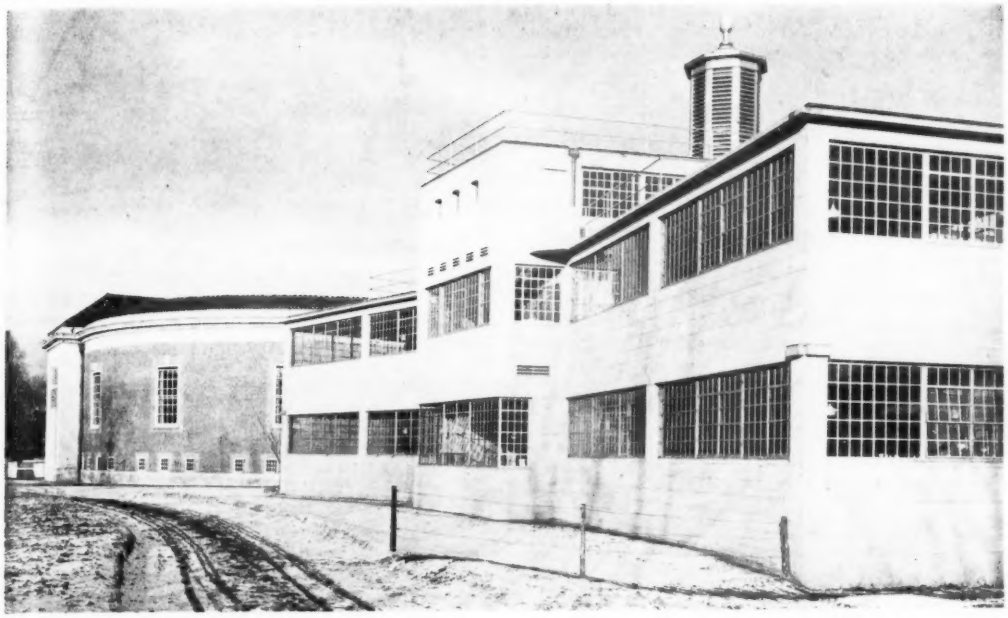
The lantern is of wood, painted green and with a copper roof and gilt finish; it forms the outlet for all ventilation and fume ducts. The roof finish is of asphalte on insulation of 2-inch compressed straw slabs (Thatchboard), these being held down by wire hooks cast in the concrete and bent over the edges of the straw slabs. Gutters are formed in the concrete roof verges and the asphalte is carried over them.

CONTRACTORS AND SUPPLIERS

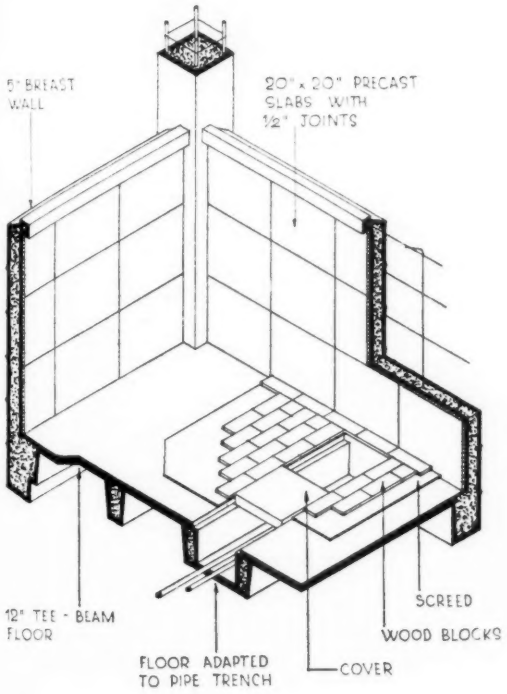
General Contractors: The Trussed Concrete Steel Co., Ltd., and F. Rendell & Sons, Ltd., Devizes.

Structural Finish: Sand-lime bricks, Ames and Finnis. Asphalte, The Ragusa Asphalt Paving Co., Ltd. Steel windows, John Gibbs, Ltd. Thatchboard insulation, Newalls Acoustic Products, Ltd. Wood block flooring, Hollis Bros., Ltd. Patent block flooring, the Granwood Flooring Co., Ltd. Jointless flooring, Stuart's Granolithic, Ltd. Ventilation and fume ducts, Cellactite and British Uralite Ltd.

Equipment: Heating and ventilation, J. H. Nicholson and Co., Ltd. Science equipment, The Bennet Furnishing Co., Ltd. Sanitary fittings, Dent and Hellyer, Ltd. Lifts, Aldous and Campbell, Ltd. Metalwork, Galsworthy, Ltd. Door furniture, A. E. Davis. Stairtreads, Safety Tread Syndicate Ltd.



A general view showing the relation of the new science building to the Memorial Hall built by the same architects in 1925.



On the left is an isometric drawing which shows how the breast walls under the windows are used as beams for supporting the floor. Below is a general view from near the Memorial Hall. (*Drawing by the Trussed Concrete Steel Company*)

C

Review of Construction and Materials

This series is compiled from all sources contributing technical information of use to architects. These sources are principally the many research bodies, both official and industrial, individual experts and the R.I.B.A. Science Standing Committee. Every effort is made to ensure that the information given shall be as accurate and authoritative as possible. Questions are invited from readers on matters covered by this section; they should be addressed to the Technical Editor.

PAPER IN BUILDING

The following article has been written in collaboration with the Building Centre

The use of tough papers, waterproofed or otherwise, has become much more common in America and Germany than in England. This is probably due to the prevalence of wood construction in both the former countries, since building paper is commonly used to make such structures wind-tight: familiarity with its qualities in wood construction has led to its extended use in other forms: many of these uses are applicable in the British Isles. Moreover, practically all the forms of paper used in America and Germany have long been obtainable in this country.

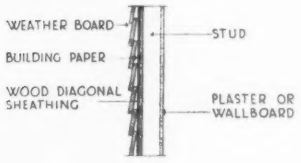


FIG. 1

TYPES

The types of paper available may be divided as follows:

1. *Kraft papers.* These are particularly tough brown papers which will stand a good deal of handling and rough use, although they are not in themselves exceptionally waterproof. Many of the roofing felt manufacturers sell Kraft papers which are waterproofed in one or more ways with bitumen ("Giant Insulating" which is saturated and coated, "Hercules" which is saturated only and "T. & B. Building Paper" which is coated only, by the Ruberoid Co., Ltd., 296 High Holborn, W.C.1. Also "Scutan" by Samuel Jones, Bridewell Place, E.C.4, and "Sisalkraft" which is waterproofed and reinforced with sisal fibre, by J. H. Sankey, Ltd., 124 Barking Road, E.16).

2. *Crepe papers.* These are similar tough papers but creped or crinkled as are thin papers used for temporary decoration and Christmas crackers. It is claimed that they are less likely to be torn or punctured than are Kraft papers because the creping process allows the paper to stretch instead of puncturing ("Crepeprufe" by Jerrard and Co., 15 Dowgate Hill, E.C.4).

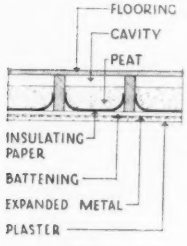


FIG. 2

3. *Impregnated papers.* This distinction is somewhat arbitrary but may be taken here as referring to papers impregnated with non-bituminous substances. The principal ones are the Willesden papers (The Willesden Paper and Canvas Co., Hancock Road, E.3). A certain amount of experiment has been carried out in America in the impregnation of paper with rubber latex, principally in order to simulate leather; there is as yet no apparent building use of this except in decoration.

4. *Waxed papers.* These are relatively thin papers coated with paraffin wax. It is claimed that they are more moisture-proof and far cheaper than other types so long as they are not subject to movement and crumpling, which pierce the wax film. Both bitumen and paraffin wax are chemically inert and unalterable, although both soften with heat and will burn (Wax Papers, Ltd., Nunhead, S.E.15).

5. *Foil-faced asbestos papers.* These are used for somewhat different purposes and will be dealt with in a later article.

WALLS

The most common use for building paper in England is as underlining to weatherboarding on wood-framed structures; abroad the paper is usually laid on a sheathing of boarding nailed diagonally or often, nowadays, of insulating wallboard (See Fig. 1). The function of the paper is to exclude wind and stray moisture, a bituminised paper being commonly used. Although these papers have no great insulation value in themselves, the fact that they prevent the passage of air and form discontinuous air cells in certain cases means that substantial reduction of heat loss is obtained. Where risk of mechanical damage is small, or the paper completely enclosed, the cheaper wax types should be adequate.

The Germans have a very complete technique of wood construction involving the use of building paper for both internal and external sheathing. Those interested should refer to the following books: *Holzhausbau*, by Konrad Wachsmann; *Bauen in Holz*, by Hans Stolper; and *Die 25 Einenfamilienhauser*, published by Julius Hoffmann. These are in the R.I.B.A. Library.

ROOFS

Bituminised papers are sometimes used as substitutes for roofing felt, laid on boards under tiles or slates. The small economy obtained is almost always inadvisable partly because the paper may be exposed to severe penetration of rain and wind, but also because it is liable to damage by the tilers. Where, however, it is desired to line an existing unlined roof or to make use of loft space, waxed or bitumenous paper can be profitably employed in conjunction with wallboard. Before nailing the sheets of wallboard to the soffits of the common rafters, the paper is stretched across the latter and fixed in place with drawing pins. Penetration of wind will be much reduced and of driven moisture prevented.

WOOD FLOORS

A common use for building paper is for retaining sound proofing lagging in joisted floors. An illustration from German sources is shown in Fig. 2 where the function of the paper is to prevent staining of the plaster by the sound-insulating medium which in this case is peat. The cheaper wax papers would do very well for this.

When ceiling panel heating is applied to joisted floors, building paper (a kraft or crepe paper will do) is used to retain the asbestos fibre lagging in place.

The practice of laying waxed paper between hardwood flooring and a deal sub-floor in order to prevent both moisture penetration and, possibly, creaking is on the increase. A London speculating builder finds this practice worth while. There is no doubt that the use of paper in this way would tend to reduce the speed of moisture absorption, although it would not be a universal cure since trouble in the way of floor buckling is often due to the absorption of atmospheric moisture from above.

The use of bituminous paper to prevent the rising of ground moisture is shown in Fig. 3. This is a German cheap house construction designed by Professor Dr. Walter Gropius. The paper here is intended to act as a continuous dampcourse over the whole structure; it should prove effective and have a reasonably long life, though most British architects would probably prefer to use a bitumen-impregnated hessian canvas. This construction (with paper) would probably not be permitted under most British building byelaws for permanent dwellings; a bituminous hessian dampcourse of heavy type would be required under the cill of the wood framing. But the illustration does show a possible application in England of paper in the familiar and frequently condemned "boards on concrete" construction. It would be desirable, moreover, to arrange through-ventilation for the cavities between the floor battens to prevent the growth of dry-rot.

The same illustration (Fig. 3) shows the use of aluminium foil as a heat insulator; we intend referring to this in a later article.

In a recent case where old, wide, oak floor boards had to be relaid above an open-joisted ceiling, the construction shown in Fig. 5 was adopted. Sheets of wallboard were first laid over the joists, then waxed paper and finally the boards. The waxed paper was intended to prevent floor washing-water from leaking through and staining the ceiling, in which it proved completely successful, although the paper had been pierced by nails.

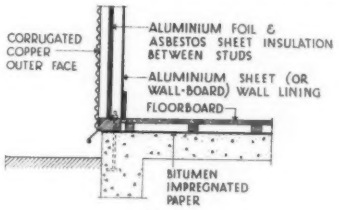
CONCRETE FLOORS

It is now common practice in America to lay terrazzo floors on building paper in order to prevent surface cracking due to shrinkage, or other movement in the structural floor on which the terrazzo is laid. A usual construction consists of a $\frac{3}{4}$ in. bed (or less) of dry sand on the structural floor with a layer of paper (usually bitumen-impregnated, though wax would probably do) above, the edges being lapped. The top finish consists of $1\frac{1}{2}$ inches of fine concrete or terrazzo in rectangles, 4 feet to 6 feet square, separated by expansion strips. Such a floor has a degree of sound resistance higher than with terrazzo direct on concrete and the risk of cracking is practically eliminated. The function of the paper is to prevent undue suction of gauging water in the terrazzo by the sand; the sand and paper together also prevent adhesion between the surfacing and structural materials. Where no sand is used the paper will serve to prevent adhesion. (Fig. 4.)

FLAT ROOFS

A somewhat similar use to the last is in asphalt roofing where it is desirable to prevent adhesion between the asphalt surfacing and a concrete structural roof, particularly where the latter is new and likely to shrink. This practice is recommended in *Building Research Station Notes from the Information Bureau*, No. 121, 15 October 1932. A bituminous paper is usual.

The Building Research Station also recommends the use of paper in a somewhat different case of roofing. Where (as in church roofs) an outer covering of lead is to be laid on oak boarding it is desirable to interpose a layer of building paper (Willesden is recommended) in order to prevent corrosion of the lead from acids in the oak, particularly new oak (*Notes from the Information Bureau*, No. 118, 6 August 1932). It is probable that waxed paper which has a greasy surface and is highly impervious would also be effective.


CORRUGATED COPPER OUTER FACE
ALUMINIUM FOIL & ASBESTOS SHEET INSULATION BETWEEN STUDS
ALUMINIUM SHEET (OR WALL-BOARD) WALL LINING
FLOORBOARD
BITUMEN IMPREGNATED PAPER
FIG. 3

PROTECTION OF METAL

There are now many cases in which metal must be kept from direct contact with such materials as new plaster and magnesium oxychloride flooring in order to prevent corrosion of the metal. Lead-sheathed electric wiring in plaster and heating pipes in magnesite flooring are typical cases. Wrapping with a waterproofed paper is usually effective in preventing corrosion.

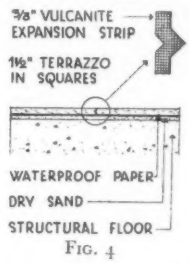


FIG. 4

PREVENTION OF STAINING

In addition to the prevention of staining in plaster ceilings, mentioned above, a possible use of waterproofed paper is in the fixing of marble. Where sheet marble is fixed to new concrete or cement-mortared walls by means of clips, paper might form an effective substitute for the usual bituminous paint.

When carpets are laid on old boards, a good deal of staining occurs as a result of draught passing up between the boards. An impervious paper, either with or without a felt, will prevent this better than a felt or felt paper alone.

TEMPORARY WORK

There are numerous cases where surfaces have to be protected during subsequent work in which paper would be of service. The customary use of sawdust often proves inadequate as protection and it is kicked and carried about by the feet of workmen. Large areas of existing floors at the Building Centre were protected by paper during structural alterations. The type of paper to be used depends on the amount and kind of mechanical damage likely to occur. When this is likely to be great, the reinforced papers such as "Sisalkraft" would be most suitable; where temporary traffic is likely to be excessive or the floor is unduly costly or susceptible to damage (*e.g.*, marble), it is nowadays customary to protect with sheets of $\frac{1}{2}$ inch wallboard, though spilt water can penetrate through the joints which must be butted. Where splashing or spilling of water is likely, waxed papers would be useful, either alone where traffic is small, or with wallboard where it is excessive.

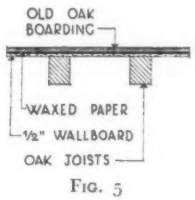


FIG. 5

The cost is small enough to be almost negligible. All types of paper have some advantage over the usual dust sheets when there is risk of water damage, and they also prevent penetration by dust, which dust sheets do not.

The use of paper to reduce evaporation (and consequently cracking) of cement renderings and concrete has been suggested. Probably the crêped papers are of most service in this case as they not only tend to hold moisture but they are not so easily split as others by casual surface traffic. They have, in fact, been primarily introduced for the curing of concrete roads.

THE D.S.I.R. ANNUAL REPORT

The Department of Scientific and Industrial Research is the nationally responsible authority controlling all official and semi-official research in this country. One of its most important sections, for us at least, is the Building Research Board. Its Annual Report for 1932-33, just published (H.M. Stationery Office, 3s.), is interesting reading, if diverse and occasionally heavy. For architects this report is of interest because it covers certain lines of research which lie outside the scope of the Building Research Station, and yet are connected with the practice of building. Most important is the work of the Forest Products Research Laboratory, and there are also Fuel, Metallurgical, Water Pollution, Electrical, Rubber and Paint Research.

A really full and informative account of the enormous amount of work covered by the Report cannot possibly be contained in 157 pages, and the technical reader is therefore not likely to find much detailed information that will be of use to him. The Report does little more than indicate in general terms the lines of research that are being followed, and only states briefly the results that have been obtained. For full details the enquirer should obtain the report of the separate establishments in which he is interested. That of the Building Research Station has already been reviewed in the JOURNAL.

In the other sections there are some interesting items calling for notice. The Forest Products Research Laboratory have been investigating the working and finishing qualities of wood, in particular finding the optimum angle for cutting tools in the planing machine for different woods. The relations between power consumed, speed of tool and depth of cut are also being investigated. The chief results of this work will be to lower cost in converting certain timbers for joinery. In the Water Pollution section the base-exchange process of water softening is undergoing thorough investigation in order to establish the softening power of various materials. Experiments have also been made on various factors affecting the action of water on lead. The principal work of the Illumination Research Committee has been to establish the effects of size of windows and of colour and reflection factors of walls and ceilings on the daylight illumination of rooms; a report on the Lighting of Docks and Warehouses has been published. The British Non-ferrous Metals Research Association have made progress in their work on frost-bursting of water pipes and the corrosion of galvanised hot-water tanks. A method of determining the "hiding power" of paint has been brought to a successful issue by the Research Association of British Paint, Colour and Varnish Manufacturers. In electrical research a report has been prepared on the heat developed by gas-filled lamps in showcases and shop window fittings giving methods for reducing the temperature to safe limits. We intend dealing with several of these items in detail in the future.

A REINFORCED CONCRETE HANDBOOK

A valuable supplement to the Reinforced Concrete Report, reviewed in the last number of the JOURNAL, is a newly published *Handbook on the Code of Practice for Reinforced Concrete.** The Code to which the title refers is that recommended in the Report for adoption by local authorities. It is practically certain that the Code will be adopted without alteration by the London County Council and by the principal urban authorities, so that this explanatory handbook should be of great service to the practitioner, saving him much labour in grasping the true operation of the legal phraseology of building regulations. That the anlaysis of the Code contained in this handbook is completely reliable is ensured by the fact that the authors, Mr. W. L. Scott, M.Inst.C.E., and Dr. W. H. Glanville, Ph.D., Assoc. M.Inst.C.E., were members of the Reinforced Concrete Structures Committee who drew up the report. Dr. Glanville being its technical officer.

REINFORCED CONCRETE PRACTICE

Another publication, received this week, deals with another but little less important aspect of reinforced concrete, or rather it can be regarded as a useful supplement to the proposed Code. It is a pamphlet entitled *Recommendations to Clerks of Works and Foremen Concerning the Execution of Reinforced Concrete Works.* It is common knowledge that the ultimate strength and even safety of reinforced concrete depends on the strict observance of the technique of construction far more than with other structural materials. Unlike other materials, it is largely fabricated on the site, and is therefore more liable to defects in supervision and workmanship than are factory-made materials. The details to which the clerk of works or foreman must attend, if the calculated margins of strength are to be fully obtained, are many. Improperly controlled mixing, careless placing of concrete or reinforcement, greasy or scaly rods, sagging and buckling or careless striking of formwork, inexact execution of details are by no means all the possible causes of loss of strength obtainable on the site.

The pamphlet referred to is a publication by the Institution of Structural Engineers, and though short and simply written, it covers adequately all the points which should be observed if good and truly economical work is to be obtained. The paragraphs are numbered, and there is a full index for easy reference on the job. The price is 6d.

REVIEW OF CONSTRUCTION AND MATERIALS

CONTENTS OF PRECEDING NUMBERS

November 11th.—Progress in Research, Bricks, Building Stones, Steel, Reinforced Concrete, Timber, B.R.S. Annual Report, Research and slum clearance, Equipment of buildings, Sliding glass doors.

November 25th.—Weathering of Portland stone, Traffic vibration, Lead pipes in clay, Copper dowels in lead and cement, Condensation, Overhead sliding door gear, Pipe pushing.

December 9th.—The formation of blisters on mastic asphalte roofs, Lifting of wall and floor tiles, Sliding glass doors, Fixing devices and plugs.

December 23rd.—Some notes on Door Springs, Floodlighting, Jointing drain pipes with neat cement, Dusting in Concrete Floors, Overhead Sliding Door Gear.

January 13th.—The St. Paul's Foundation Report, Bathing pool surrounds, Electric water heaters and the formation of scale.

January 27th.—The Report of the Reinforced Concrete Structures Committee, Some steel alloys recently introduced, The manhole cover, Tightening wires.

* *Explanatory Handbook on the Code of Practice for Reinforced Concrete.* by W. L. Scott and W. H. Glanville. Concrete Publications, Ltd. 8s.

Book Reviews

SLUMS

Four publications on the slum, its course, its intensity, and the methods for removing and alleviating it, emphasise the growing volume of opinion which more and more insistently demands that this menace to the social, financial and moral worth of the nation should be swept away. Pronouncements from all sections of society follow one another, and it would appear at last as though seeds sown in the early days of the century are about to bear fruit.

The Anti-Slum Campaign, by Sir E. D. Simon, follows upon the same author's *How to Abolish the Slums*. A well-printed and well-ordered volume gives a careful summary of post-war housing legislation, with special reference to the policy enunciated in 1929 by the National Housing Council. Summing up the various Acts, Sir Ernest, as a good Radical, enjoys knocking together the heads of the Tories and the Socialists. He points out the danger of alternating Governments of the two parties, each reversing the plans of the other.

On the question of subsidies he believes that one subsidy will be necessary for reducing the rent of new houses and another to meet special costs of slum clearance.

The minimum standard house for which he pleads is a non-parlour, three bedroom house of 760 ft. floor area, and he wants a hundred thousand of these built each year by the local authorities: half of them let at an inclusive economic rent not exceeding 12s., and the other half let to those who cannot afford the economic rent at a sum ranging from 5s. to 10s. a week.

He says there are a million poor families in the slums who can be housed by local authorities by the aid of subsidies. Subsidies must be given only to those who need them and for as long as they need them. The total cost to the Exchequer and the rates of abolishing all the slums he estimates at under £20,000,000 a year.

He attributes the failure to remove the slum to the failure to build enough new housing. To meet all the existing shortage of houses and the prospective increase in families, nearly two million additional houses will be needed by 1951; there are four million houses to-day below any possible standard; so that six million houses altogether are needed—a task offering steady employment to the building trade for the next thirty years. But, before this is done, he insists strongly upon the necessity for each local authority undertaking long-range planning of its existing built-up areas.

The other controversial question of differential renting is adequately dealt with, and the author comes to the conclusion that it is a workable proposition. Sir Ernest deals very briefly with the vexed question of a National Housing Board, which, on a basis of a business man as chairman and five experts for the remainder, spending their whole time on the problem, he thinks might be more effective and energetic than present methods; but, broadly speaking, he considers there is already an effective organisation: the machinery is there and is working fairly well. He is convinced that local authorities must carry out the work. Sir Hilton Young has left a free field for private enterprise, which is not responding; and as local authorities nearly always employ architects it is they who are likely to build better and cheaper houses, and, on the whole, their houses should be two shillings a week cheaper than private enterprise houses.

It is difficult to conceive of a more useful publication on a small scale. The words on the cover may be fittingly quoted:—

"The problem and its one real solution—providing steady prosperity for the building trade for the next thirty years and for every family a good house in a healthy, convenient and beautiful city."

Less technical and perhaps easier to be read by the man in the street is *Slum*, by Howard Marshall and Avice Trevelyan. This book claims to be written from personal observation of slum life.

Written in the easy manner one associates with Mr. Marshall, it makes a general survey of the position, dealing particularly with London. The programme of the L.C.C. is dealt with rather drastically. "To call it even a preliminary plan for dealing with London slums," says the author, "is fantastic. It nibbles at the problem and that is all."

Among other epithets applied to it are "vague," "inconclusive," "incomplete," "timid," "ineffective," and the warning given, after quoting the conclusions of the L.C.C. committees, is: "There is caution for you, and more than a hint that the £35,000,000 is merely a kite that will in all probability be hauled down."

Mr. Marshall plumps heavily for a Housing Corporation with a separate department for Greater London, with powers over both housing and town planning. Large scale replanning must take the place of small clearances, and legislation must control site values. His final plea is for birth control.

The age-long story of the slum and its victims is painfully well told, but the author combines with the social side sound advice as to action. Once public opinion is aroused, he says, by a vision of a new wisely planned England, the attack will begin in earnest.

The Anti-Slum Campaign, by Sir E. D. Simon. Longmans, Green and Co., 2s. 6d. net.

Slum, by Howard Marshall and Avice Trevelyan. William Heinemann, Ltd., 3s. 6d. net.

A Hundred New Towns for Britain, by Ex-Service Man J 47185. Simpkin, Marshall, Ltd., 1s. net.

The Housing Horrors of London, published by the National Federation of Building Trades Operatives. Price 2d.

Of quite another character is a foolscap fascicle of 36 pages, entitled "A hundred new towns for Britain: an appeal to the electorate."

These hundred new towns are to be built as a memorial to those who fell in the war, and a map is given showing how they could be allocated throughout the United Kingdom.

Without any acknowledgment to Ebenezer Howard, the arguments of the Garden City movement are used and reasons given for the preservation of the countryside, the improvement of agriculture and the setting up of new industrial and residential towns. The cost is put at a thousand million pounds and the raising of this money presents no difficulty to the author. Without worrying about loans or interest, he proposes that the Treasury should print banknotes to the amount required and hand it over to the fraternity that is to carry out the work.

In return, they will give a definite pledge "that the new money would not be employed by it for any other purposes whatsoever. Such a pledge will constitute an assurance that the money market will not be disturbed."

This anonymous author is an optimist.

The Housing Horrors of London reprints extracts from Mrs. Barclay, Mr. Marshall, Mr. H. V. Morton and others, and, in its thirty-two pages, gives a horrible picture of the slum and all it means. Two telling quotations are given—from Professor Lethaby : "Except for a hundred or two buildings, London needs to be rebuilt from end to end"; and from Sir Herbert Samuel: "A concerted effort should be made to pull down South and East London, and large parts of North and West, and to replan and rebuild them." The Federation has an honourable record regarding housing work. It has spent freely of its money in a slum improvement campaign all over the kingdom, and its officials have rendered valuable services. At the call of a Government, which guaranteed a fifteen years' programme, the Union diluted its labour, during the housing boom in 1920, to such an extent that it has now some 160,000 workpeople on its unemployed list. No wonder they are interested in housing!

E. G. Culpin [*F.*].

GEORGIAN HOUSES OF AMERICA

It is hardly with America that one associates the idea of old architecture, but a moment's reflection will show that the early settlers must have had dwellings of some sort, and this excellent book tells us how, when the civilisation of the Old World had considerably spread in the New, men of wealth and culture turned their attention to fine domestic building. It was the Old Country that provided the inspiration, and Mr. R. T. H. Halsey in his scholarly Foreword indicates the steps by which this came about. The interest in architecture which was taken by the nobility and gentry in England, of whom Lord Burlington may be held to be the best known example, was shared by the most eminent of the colonists. Many of them had considerable libraries of the numerous books on architecture which were published during the eighteenth century, and of these they made constant use, even so far as to copy some of the designs. Mr. Halsey has investigated the subject with great thoroughness, he names the books, he gives instances of the copying, he shows how help was obtained from England, both by inviting architects across the water and by importing such things as chimney-pieces and wallpapers. But although much help was thus directly obtained, there was a good deal of independent design. The employer often provided his own design with the help of his books, and the same spirit animates the work in America as gave their character to our own eighteenth century houses. In the larger mansions it is grandeur of disposition that is sought rather than the domestic comfort which we now desire. Many of them adopt the stately idea of a central block with outlying wings connected by corridors, and in one of the wings is almost certainly to be found the kitchen. This wide separation of the place for cooking from that for eating provoked in our own land the criticism of Evelyn, who gave a warning that some of the dishes might "straggle by the way." But the separation is more marked in these American examples than in our own, and in some instances the kitchen is wholly detached from the house. This fact suggests the question as to whether it was thought desirable to keep the black cook and his staff from too close an association with the household. That the old ideas in design generally had become modified when the nineteenth century was well on its way is shown by the comment of an owner who altered part of his house from the original treatment to what he calls "the Common Sense Plan."

The illustrations, of which the book entirely consists (with the important addition of the Foreword), are admirable. They include good photographs and charming drawings of elevations, plans, layouts and details, both exterior and interior. The layouts show how closely English types were followed. In one of them, however, the particular circumstances of America at that period are curiously indicated, for as part of the formal layout appear rows of huts for slaves, an overseer's house, a hospital and a burying ground. Some of the houses, and among them Mount Vernon, the home of Washington, are delightfully situated by rivers or by lakes, and most of them are embosomed in trees—"embosomed in the grove," as Pope has it—so that one might almost think that one was looking at an old house in an English park. The same familiar associations are aroused by the inside work, for the panelled walls, the doors with their

Great Georgian Houses of America. Published for the Benefit of the Architects' Emergency Committee by the Editorial Committee. New York. 1933. $20.

cornices, the handsome chimney-pieces and the balustraded staircases reflect the treatment of our own large houses. One exception there is, "a Chippendale Stairway," in which a net-work of crossed bars, taking the place of vertical balusters, produces an effect more novel than pleasing.

The houses illustrated are all to be found, as might be expected, in the Eastern States, and they range from Georgia in the south to Maine in the north, a distance of some 1,200 miles, a fact which itself is a tribute to the interest and energy displayed by the compilers of the book. It would be impossible in the space at command to mention, far less to comment on, the forty-four houses that are illustrated, among which Mount Vernon and the White House at Washington are probably most familiar to English ears. But they include houses of all sizes, from one with a façade of over 300 feet to others of some 50 feet or less. In regard to the dates of their erection, these cover the whole of the eighteenth century and the first thirty years of the nineteenth. They form a most valuable and illuminating record, and our warmest thanks are due to the Editorial Committee for their thorough work which has found so beautiful an expression.

J. A. Gotch [*F.*].

ARCHITECTURAL HISTORY AND TOPOGRAPHY

WINCHESTER COLLEGE

Winchester College. *By Christopher Hawkes. London: Country Life. 10s. 6d.*

Part of the material of this book has already appeared in the form of illustrated articles in the pages of *Country Life*, but here both illustrations and letterpress have been much amplified. The former are extremely well chosen and of the uniform excellence we are accustomed to expect from *Country Life* productions. The author, Mr. Christopher Hawkes, himself obviously an Old Wykehamist, has tried, as he says in his author's note, "to write for all others besides Wykehamists." In a scholarly introductory essay he traces the growth of the oldest of public schools from the date of its foundation in 1382 to the present day, managing to compress the crowded history of some 550 years into a few pages. These pages contain much interesting historical information and succeed also in conjuring up that unique atmosphere of mediæval yet still vital beauty which is so strongly felt by all who know the place: in those less fortunate they should evoke a firm resolve to experience that beauty at first hand.

Winchester College was happy in having as its founder a far-seeing educationalist possessed also of considerable architectural experience. This experience, gained by him as Clerk and Surveyor of Works to King Edward III at Henley and Windsor Castle, and curiously crowned in the manner of that day with a bishopric, stood William of Wykeham in good stead, and, in the dual rôle of client and architect, he was able to carry out his bold conception free from interference.

This conception was twofold and envisaged the foundation not only of a School at Winchester, in which town he himself had received his early education, but also of New College, Oxford, which it was to serve as a younger sister. To both buildings he gave the same typical mediæval college plan consisting of groups of boarding houses enclosing a quadrangle, as opposed to the older monastic "corridor" system of Church and Cloisters. At Winchester the main quadrangle is called Chamber Court and is approached from the street by way of an outer service courtyard. One side of Chamber Court is occupied by Chapel and beyond this there is an exquisite cloister surrounding the Chantry of John Fromond.

Externally all this remains virtually as originally designed, but internally there have been a few modifications in arrangement and some tragic depredations. Chapel especially suffered from the religious enthusiasts of the nineteenth century, and it is sad to reflect upon the injury then done to a fabric which had so successfully weathered the storms of the reign of Henry VIII and the Civil Wars.

Between 1822 and 1829 the stained glass windows intended by Wykeham to be the dominant note of a simple scheme of decoration were sent for repair to a firm who, incredible as it may seem, replaced them by copies, a substitution which for some time remained undetected. Nor was this all, for in 1874 Butterfield, of less than blessed memory at Winchester, actually removed the magnificent Renaissance screen and altar rails, which, fortunately, are still preserved at Hursley Park.

Nor since then has the School been altogether fortunate architecturally, and it is noteworthy that, whereas the author of this book has devoted considerable space to a description of the many new buildings which have been added to the School from time to time, the majority of them find no place among the illustrations. More recently there are indications of a growing sense of architectural responsibility and, apart from the care devoted to the preservation of the original fabric, much has been done in a modest way to efface the marks of earlier and less sympathetic hands and to add to the amenities of the college precincts.

John Grey [*F.*].

KENTISH HOUSES

The Country Homes of Kent, *by Arthur Oswald. London: Country Life. 1933. 12s. 6d.*

The weekly "House" article in *Country Life* has become an institution; and for the convenience of those who wish to study English country houses of any particular period the articles which have appeared in the above series have been republished in several separate volumes, each of which deals only with examples taken from a certain period in time.

We are now told that it is proposed to treat this subject from the geographical standpoint, and the unit chosen is the county.

The admirable book now under review is the first in this new series, but it must be understood that it is not merely a rearrangement of the same information to be found in any of the previous publications of *Country Life*. It is an entirely new book, new in matter as well as in manner.

It is natural that the county of Kent should be the first to be dealt with. It is also fortunate that the choice of houses to be found there may be considered to form an epitome of the domestic architecture of England as a whole. This comprehensiveness is due to the unusual richness of the county in houses of all periods and to the great variety of local building materials. This very diversity of possible treatments naturally did not conduce to the formation of a marked local style, such as that to be found in the Cotswolds, so that the casual observer, if confronted with a photograph, could seldom say off-hand "That is a house in Kent."

In qualification of this general statement some mention should be made of the timber-framed yeomen's houses of the fifteenth century. Though this type of house is not restricted to Kent only, there is hardly a village in the Wealden but can boast one of greater or less degree, and sometimes more than one. I had the good fortune to accompany the author on several of his expeditions when collecting material for this book, and having little previous knowledge of the county I was impressed by the frequency and constancy of the type. Few if any retain the mediæval arrangement of a hall occupying the whole height of the house, though a number have more or less recently been restored to that condition.

The almost universal practice in Elizabethan times was to insert one or more floors in the height of the hall and add fireplaces in the rooms as formed, thus accounting for the sizeable chimney stack rather towards one end of the main ridge, which is such a characteristic feature.

Perfect examples of the type may be seen in Synyards, Otham, and at Link Farm, while sometimes, as at Barham, the familiar skeleton is not at first recognised in its later clothing of weather-boards or tile-hanging.

The many photographs which illustrate the book, coming as they mostly do from the archives of *Country Life*, are of the quality we have come to expect from that source. So is the happy blend of historical research, anecdote and sane architectural criticism which Mr. Oswald contrives to give in his descriptions.

The book is arranged chronologically and is excellently indexed. There is at the beginning an alphabetical list of the houses described and illustrated and an adequate map so that it is easy to find any particular house either in the book or in the county.

H. A. N. MEDD.

A HISTORY OF LINGFIELD

EDITED BY ARTHUR B. HAYWARD AND STANLEY HAZELL. *Tunbridge Wells. Courier Publishing Co. 1933.*

The list of locally produced Parish Histories is a slowly growing one; Downe, in Kent, and Compton, in Surrey, have lately been done, and here is a book of 90 pages, sold at 1s. 6d. and 2s. 6d., which may well serve as a model for the scores of village histories that ought to be written and that architects are well qualified to write. The cost of production is the difficulty. In this instance it was £80, and some 87 subscribers provided £50 towards this sum. Five hundred copies were printed, and all but 80 were sold in a few weeks: the whole cost has been met, and there will be a few pounds to go back to the subscribers.

The book opens with a note on early man together with the recent excavations at Dry Hill Camp, and then follows a short but well filled outline of the history of ten manors in the parish. Architecture enjoys a large share of the book, for Lingfield Church is an important one, and contains the well-known Cobham monuments, as well as a good number of brasses, a certain amount of old glass and two unique earthenware grave slabs of the sixteenth century. The omission of any plan of the church is unfortunate.

The history of both church and parish is closely bound up with an important college that flourished until 1544, when the whole of its property was made over to King Henry VIII, and by him granted to Thomas Cawarden: one of the most interesting things in the book is the deed by which the Master, Chaplains and Clerks of the college "with their unanimous consent and assent" and "further with free will and voluntarily" . . . "give, grant, tender, deliver and confirm" to the King the said college or church "and also . . . our manors, lordships, rectories, messuages, gardens, curtileges, tofts, lands and tenements, meadows, feeding grounds, pastures, woods, underwood, rents" and so forth to the number of 61 different classes of possessions, the whole being a very choice example of sixteenth-century lawyer-craft. A map of the Lingfield portion of the property is given in the book, but very little is now left of the actual buildings.

Another interesting reference is to the Enclosure of Commons in 1809; it appears to have been done not only to extend the area of cultivation but also to provide money for improving the parish roads.

All the old buildings of any importance are dealt with, and there are extracts from ancient accounts, histories of the principal families, the parish charities, a very good note on the Lingfield Race Course and an account of the old coaching services. The recollections of the oldest inhabitant are given: some references to Poor Law administration and to the fairs and many other things. A kind of Jane Austen touch comes in 1862, when the vicar retired and presentations were made to him, his wife and his daughters.

The book is one to be freely praised, a notable adventure on the part of a member of the Institute and his neighbour. Well illustrated and provided with good maps.

A. K.

SURREY

SURREY ARCHÆOLOGICAL COLLECTIONS. VOLUME XLI. *Guildford: published by the Surrey Archæological Society. 1933.*

The architectural interest in this year's volume is confined chiefly to a note on some beautiful glass in Buckland Church and to a well-written appeal by Mr. A. W. Clapham for examples of our later domestic architecture to be safeguarded and to be well surveyed and recorded. The antiquary is deeply interested in the houses of his ancestors down to the time of Elizabeth or James I, but he gives, officially at all events, little thought to those of the later seventeenth and the eighteenth centuries and the Regency; but Mr. Clapham points out that "a perfect house of the age of Queen Anne, of William Kent or of the Brothers Adam is as well worthy of preservation as a Tudor mansion or a work of Inigo Jones." The houses of the eighteenth century mark the emergence of the middle class; they were a new development in plan and design, both inside and out, and they present the immediate models on which nearly all the traditional elements of our present-day domestic architecture are based. Mr. Clapham asks for steps to be taken both by the individual and by the local societies to secure the retention of all fine examples and for careful records to be made where destruction is inevitable.

The whole chapter is well worth reading, and very convincing, and it is well supported by a note added by Mr. Hilary Jenkinson and by half a dozen of Mr. Harold Falkner's lovely pencil sketches. They are drawn with precision but with a graceful ease that is very enviable, and they suggest the texture of brickwork in a remarkable way. One of them, a detail of a carved door-head, is a drawing that anyone might be proud to have made.

The volume contains an exhaustive study of the Pilgrim's Way, by Mr. Edwin Hart, and a report on the excavation of Dry Hill Camp, at Lingfield.

A. K.

ACCESSIONS TO THE LIBRARY

1933–1934—IV

INCORPORATING

NOTES ON RECENT PURCHASES

(These Notes are published without prejudice to a further and more detailed criticism.)

Lists of all books, pamphlets, drawings and photographs presented to, or purchased by, the Library are published periodically. It is suggested that members who wish to be in close touch with the development of the Library should make a point of retaining these lists for reference.

Books presented by Publisher or Author marked R.
Books purchased marked P.
** Books of which one copy at least is in the Loan Library.*

ARCHITECTURE

BAKER (*Sir* HERBERT)
*Cecil Rhodes.
8¾″. xv+182 pp. London: O.U.P. 1934. 10s. 6d. R. & P.

VIOLLET LE-DUC (M.)
Entretiens sur l'architecture. 3 vols. 1863–1872.
A copy of this work has been presented to the library by *Mr. A. L. Hall* [*A.*]

ARCHITECTURAL ASSOCIATION
The Architects diary and technical reference. 1934. R.

DESIGN

PICKERING (ERNEST)
Architectural design.
4o. 11¼″. xvii+311 pp. New York *and* London: Wiley *and* Chapman and Hall. 1933. 40s. R.

HISTORY

LONDON SURVEY COMMITTEE
*Monograph xiii. Swakeleys, Ickenham.
Two copies of this work are now in the library, *one presented by Mr. J. E. Yerbury* [*F.*]

WRIGHT (LAURENCE)
Report of a tour in Spain. The Owen Jones Studentship, 1931.
2 vols. 4o. 13¼″. Typescript sheets and photographs and water-colours. Typescript. 1931. *Presented by the author.*

SILCOCK (A.)
China's treasures of art in danger. [*In* The China Review, Jan.–March, 1934.] 4o. 11″. London. 1934. 2s. *Presented by the author.*

CASSON (HUGH)
The Byzantine wall brick in Greece. Thesis for final examination. December 1933. fo. 14½″. typescript. 1933. *Presented by the author.*

STENTON (F. M.)
Norman London. With a translation of William FitzStephen's description by H. E. Butler. And a map of London under Henry II by M. B. Honeybourne. (Historical Association Leaflets Nos. 93, 94.)
pam. 8½″. London: Bell. 1934. 2s. 6d. P.

MENDELSOHN (ERICH)
Russland, Europa, Amerika.
4o. 12½″. 215 pp. Berlin: Mosse. 1929. *Presented by the author.*

MENDELSOHN (ERICH)
Bauten und Skizzen.
4o. 12½″. 66 pp. [1923.] *Presented by the author.*
The reference copy of this book has now been transferred to the loan.

SANTOS (FRANCISCO DOS)
Arquitectura desenhos originais do Eng°—Arquitecto Francisco dos Santos.
p.fo. 20″. 132 pp. *and* 100 plates. Lisbon. 1933. *Presented by the author, through the Foreign Office.*

TCHERNYKHOV (JACOB)
Architectural fictions [text in Russian].
4o. 11¾″. 102 pp. *and* 101 coloured plates. Leningrad. 1933. £2 6s. P.

SOCIETATEA ARCHITECȚILOR ROMÂNI
Architectura, 1931-1933. (Resista apare sub îngrijirea comitetului) [Modern Bulgarian Architecture.]
4o. 12½″. 92 pp. Bucharest. 1933. R.

MENDELSOHN (ERICH)
Amerika.
12½″. 222 pp. Berlin: Mosse. 1928. *Presented by the author.*

PROFESSIONAL PRACTICE

SAFFORD (ARCHIBALD)
The Rent and mortgage interest restrictions Acts, 1920 to 1933.
7th Edn. 8¼″. xxx+270 pp. London: Sweet and Maxwell. 1933. 7s. 6d. R.

SPON
Architects' and builders' pocket price book. 1934. 5s. R.
The 1933 edition has been transferred to the loan.

BUILDING TYPES

(CIVIL)

COOPER (ARTHUR W.)
The Planning and design of county police stations. Thesis for R.I.B.A. final examination, 1933.
4o. 12½″. typescript. 1933. *Presented by the author.*

COOPER-KEY (*Sir* A.)
The Storage of petroleum-spirit and carbide of calcium . . . Revised by Sir T. H. Crosier *and* R. A. Thomas.
3rd Edn. 7¼″. xi+198 pp. London: C. Griffin. 1934. 7s. 6d. P.

SOANE MUSEUM, *London*
A Short account of the evolution of the design of the Tivoli corner of the Bank of England designed by Sir John Soane, R.A., in 1804–5.
pam. 9¾″. London. 1934. 6d. R.

TOWNROE (B. S.)
Westminster's modern mortuary. [*From* The Municipal Journal and Public Works Engineer. Jan. 5, 1934.]
pam. 4o. 12¾″. London. 1934. 3d. P.

(ECCLESIASTICAL)

BLOSS (W. ESCOTT)
The Story of England's churches.
7¾″. xii+283 pp. London: Mowbray. 1930. 3s. 6d. (remaindered). P.

WILLIAMS (LLEWELLYN E.)
Mersham church: its builders and parishioners.
7½″. 95 pp. Redhill: The Holmesdale Press. 1929. *Presented by the author*

GIBB (*Sir* ALEXANDER) *and* FREEMAN (RALPH)
St. Paul's Cathedral. Investigations of foundations and subsoil. November 1933. (Joint report.)
4o. 13¼″. 24 pp. *and* 4 folding plans. Westminster. 1933. R.

(EDUCATIONAL)

LARSON (J. F.) *and* PALMER (A. M.)
Architectural planning of the American college.
10″. 181 pp. New York *and* London: McGraw-Hill Book Company. 1933. 12s. P.

LIBRARY ASSOCIATION
*Library buildings, their heating, lighting and decoration. Edited by R. D. Hilton Smith. 8½″. 68 pp. London. 1933. 4s. R. & P.

(Domestic)

Harrington (D. E.)
The Latest examples of American apartment houses with notes on recent theatre work in U.S.A. (Alfred Bossom Studentship Report, 1933.) 4o. 11″. Typescript. 1933. *Presented by the author.*

Smith (A. Llewellyn)
Bricks and mortar. [Typical problems in the planning of a Boys' Club.] (*In* The Boy. Sept. 1933.)
8o. pam. London. 1933. 6d. P.

South Wales Federation of Boys' Clubs
Proposed boys' clubs at Cross Keys and Pontypridd. (In fifth annual report, 1933.) 4o. pam. Pontypridd. 1933. R.

Burke (*Sir* Bernard)
A Visitation of the seats and arms of the noblemen and gentlemen of Great Britain and Ireland.
9¾″. 227 pp. London: Hurst and Blackett. 1855.
Presented by Mr. A. L. Hall [*L.*].

Architects' Emergency Committee: Editorial Committee
Great Georgian houses of America.
4o. 14″. 264 pp. New York: *Printed by* The Kalkoff Press. 1933.
820. P. by subscription.

Details

Aloi (Roberto)
L' Arredamento moderno.
4o. 10¾″. xviii pp. *and* 710 illustrations. Milan: Hoepli. 1934—xii. 150 lire. R.

American Institute for Persian Art and Archæology
Persian fresco paintings.
10″. 18 pp. *and* 44 plates *and* bibliography. New York. 1932. 7s. 6d. P.

Thorwaldsen (B.)
Der Einzug Alexander des Grossen in Babylon. Marmorfries. Nach Zeichungen von F. Overbeck . . . Herausgegeben von Dr. H. Lücke.
ob. fo. 13″+20½″. 14 pp.+frontispiece *and* 21 plates. Leipzig: A. Dürr. 1870. *Presented by Mr. Henry Smith* [*L.*].

Fox-Davies (A. C.)
Heraldic badges.
7″. ix+160 pp. London: Lane. 1907. 2s. 6d. (remaindered). P.

ALLIED ARTS

Evans (Joan)
Nature in design. A study of naturalism in decorative art from the Bronze Age to the Renaissance.
9¾″. xvi+115 pp. London: O.U.P. 1933. 15s. P.

Royal Academy of Arts
Exhibition of British Art, c. 1000-1860. Short catalogue.
8¾″. xxxiv+320 pp. London: Burlington House. 1934. 1s. R.

Quennell (M. and C. H. B.)
Everyday life in Roman Britain.
A copy of this work has been added to the loan library.

LEARNED SOCIETIES

The publications of the following societies have been received:

Society of Antiquaries of London
The Antiquaries' Journal. Vol. xiv. January 1934. 5s.

Royal Society of Antiquaries of Ireland
The Journal. Vol. lxiii. Part II. Dec. 1933. 10s. 6d.

Surrey Archæological Society
Collections. Vol. xli. 1933.

Society for the Promotion of Hellenic Studies
The Journal of Hellenic studies. Vol. liii. Part II. 1933. 21s.
(*Including* G. Rodenwalt. Sarcophagi from Xanthos.)

Society for the Promotion of Roman Studies
The Journal of Roman studies. Vol. xxiii. Part II. 21s.
(*Including* R. O. Fink. Jerash in the first century A.D.
R. C. Carrington. Notes on the building materials at Pompeii.
I. A. Richmond. Commemorative arches and city gates in the Augustan Age.)

Empire Forestry Association
Journal. Vol. xii. No. 2. 1933. 7s. 6d.

BUILDING

Burnet (*Sir* John), Tait *and* Lorne
*The Information Book.
4o. v+57 pp. *and* 147 plates. London: Architectural Press. 1933. 25s. R. & P.

Industry

National Employers' Mutual General Insurance Association, Ltd.
Accident prevention in the building and allied trades.
12mo. 6″. 195 pp. London. 1933. 6d. R.

Construction

Knoop (Douglas) *and* Jones (G. P.)
The Mediæval Mason.
8½″. xii+294 pp. Manchester: University Press. 1933. 12s. 6d. P.

British Steelwork Association
Modern steelwork. A review of current practice, *etc.*
10″. 271 pp. London. 1933. 5s. R.

Institution of Structural Engineers
Report on steelwork for buildings. Part I. Loads and stresses.
The library has received a revised edition of this work.

Cantell (M. T.)
*Practical designing in reinforced concrete. Part II.
8½″. viii+291 pp. London: Spon. 1933. 12s. 6d. R. & P.

Department of Scientific and Industrial Research: Reinforced Concrete Structures Committee
*Report of the reinforced concrete structures committee of the Building Research Board, with recommendations for a code of practice for the use of reinforced concrete.
pam. 9¾″. London: H.M.S.O. 1933. 1s. 3d. R. 2.

Sanitary Science and Equipment

Ministry of Health
Model byelaws. xxi. Prevention of waste, *etc.*, of water.
pam. 9¾″. London: H.M.S.O. 1928. (*Reprint* 1931.) 6d. P.

Swarbrick (John)
*Easements of light. Vol. II. Optical and photographic methods of assessing depreciation.
9½″. 198 pp. London: Batsford. 1933. 30s. (2) *Presented by the author.*

TOPOGRAPHY

Hayward (Arthur B.) *and* Hazell (Stanley)
A History of Lingfield.
7¼″. 86 pp. Tunbridge Wells: Courier Printing and Publishing Company. 1933. *Presented by Mr. A. B. Hayward* [*F.*].

TOWN AND COUNTRY PLANNING

(West Essex) Advisory Joint Town Planning Committee
The West Essex regional planning scheme, 1933. The report prepared for . . . the committee by Professor S. D. Adshead.
9¾″. 120 pp. *and* 7 folding maps. London. 1933. 5s. R.

Manchester Corporation Town Planning and Buildings Committee
Site planning and roads and small house design.
9½″. 6+12 pp. Manchester. 1933.
Presented by the City Architect's Department, Manchester.

Rome: *Government of.* (Governatorato di Roma.)
Piano regolatore di Roma. 1931. Anno ix.
4o. 13½″. 111 pp. *and* 12 plans. Treves. 1931. 25s. P.

GARDENS

Gothein (M. L.)
A History of garden art. Edited by W. P. Wright and translated by Mrs. Archer-Hind.
2 vols. 4o. 10¾″. London: Dent. 1928. £4 4s. P.

DRAWINGS

SPIERS (PHENÉ)
Views of buildings in Italy, Greece, Egypt, France, Germany, Belgium and England.
29 water-colours. *Presented by Mr. A. H. Spiers and Mr. A. F. Spiers.*

HAYWARD (C. F.)
Sutton Place, Surrey.
13 sheets of measured drawings. 1891.
Presented by Mr. A. B. Hayward [*L.*]

BROOKS (W.)
Sutton Place, Surrey.
One plan showing the state of the house at the end of the 18th century. *Presented by Mr. A. B. Hayward* [*L.*]

BOOKS PRESENTED BY MR. H. L. ANDERSON [*L*]

HISTORY

[HÉRÉ DE CORNY (EMANUEL)]
Recueil des fondations et établissemens faits par le roi de Pologne, duc de Lorraine et de Bar, qui comprend . . . et les bâtimens que sa majesté poloise a fait élever dans la ville de Nancy pour son embellissement.
Nouvelle édition. fo. 16″. [8] + 188 pp. Luneville: C. F. Messuy. 1762.

HÉRÉ DE CORNY (EMANUEL)]
Compte général de la dépense des edifices et bâtimens que le roi de Pologne. . . . de la ville de Nancy depuis 1751 jusqu'en 1759.
fo. 16″ [2] + 135 + xii pp. *and* 3 folded engraved plates. Luneville: C. F. Messuy. 1761.
This work is bound with Héré de Corny's Recueil des fondations . . . dans la ville de Nancy. 1762.

DE CARDONNEL (ADAM)
Picturesque antiquities of Scotland.
8o. 8″. iv + 30 pp. *and* many unnumbered plates and text. London: *Priv. printed.* 1788.

KLEINER (SOLOMON)
Les Quatres représentations des plans et veües tant agréable que belles, qui se trouvent hors de la résidence de Vienne, c'est à dire, 1. La maison de plaisance impériale . . . de même les jardins de plaisance; 2. du prince de Schwarzenberg, *etc.*, tracé par S. Kleiner aux depens de J. A. Pfeffel. Part 1.
fo. 18½″ [4] pp. *and* 32 engraved plates. [Augsbourg. 1724.]

BUILDING TYPES

WHITE (WILLIAM H.)
Architecture and public buildings, their relation to school, academy and state in Paris and London.
8o. 8½″. viii + 216 pp. London: P. S. King. 1884.

ROBINSON (P. F.)
Village architecture . . . designs for the inn, the schoolhouse, almshouses . . . supplement to a work on Rural Architecture.
4o. 12″. viii pp. *and* 48 plates *and* text. London: *Printed for* J. Carpenter. 1830.

(CIVIL)

HOWARD (JOHN)
An Account of the principal lazarettos in Europe . . . with further observations on some foreign prisons and hospitals.
2nd Edn. 4o. 11½″. vii + 259 + 32 pp. *and* 23 plates. London: *Printed for* J. Johnson. 1791.

HOWARD (JOHN)
The State of the prisons in England and Wales . . . and an account of some foreign prisons and hospitals.
4th Edn. 4o. 11½″. 540 pp. *and* 22 plates. London: *Printed for* J. Johnson. 1792.

STARK (WILLIAM)
Remarks on the construction of public hospitals for the cure of mental derangement. (Read to a committee of inhabitants of the city of Glasgow, appointed to receive plans with a view to that object.) Including
Observations on the structure of hospitals for the treatment of lunatics . . . an account of the intended establishment of a lunatic asylum at Edinburgh.
8o. 9½″. Edinburgh: *Printed by* James Ballantyne. 1807.

LETTSOM (J. C.)
Hints respecting the prison of Newgate. (Extracted from the fourth volume of Memoirs of the Medical Society of London.)
8o. 8½″. 23 pp. *and* 2 plans. London: *Printed by* Darton & Hawey. 1794.

SPECCHI (ALESSANDRO) *Engraver*
Il Quarto libro del nuovo teatro delli palazzi in prospettiva di Roma moderna, dato in luce sotto il felice pontificato . . . Innocenzo xii. Disignato et intagliato da Alessandro Specchi.
ob.fo. 10¾″ × 16″. 2 pp. *and* 50 engraved plates. Rome: Rossi. 1699.

MILNE (JAMES)
An Enquiry into the theory and principles of bridges and piers, *etc.*
8o. 8½″. vi + 58 pp. *and* 16 plates of figures. Edinburgh. 1816.

(ECCLESIASTICAL)

RAINE (JAMES)
Catterick church in the county of York. A correct copy of the contract for its building dated in 1412, . . . plates of views, elevations and details by Anthony Salvin, . . . arc hitect.
4o. 11″. 21 pp. + frontispiece *and* 12 plates. London: J. Weale, 1834.

WILLIS (BROWNE)
A Survey of the cathedrals of York, Durham, Carlisle, *etc.*
4o. 9½″. 2 vols. London: *Printed for* R. Gosling. 1727–1730.

(FERABOSCUS (MARTINUS))
Architettura della basilica di S. Pietro in Vaticano.
fo. 19½″. 3 pp. *and* 30 engraved plates. Rome. 1684.

(DOMESTIC)

ANONYMOUS
Plans and elevations of London club houses. And 3 plans of the House of Lords. (No title page nor author).
22 + 3 plates of original drawings. [18—].

BARTELL (EDMUND)
Hints for picturesque improvements in ornamented cottages and their scenery . . . in three essays.
8o. 9¼″. xi + 140 pp. *and* 6 aquatint plates. London: *Printed for* J. Taylor. 1804.

WINGFIELD (MERVYN RICHARD), 8TH BARON POWERSCOURT
A Description and history of Powerscourt.
4o. 12½″. xv + 151 pp. *and* 15 plates. London: Mitchell and Hughes. 1903.

ROBINSON (P. F.)
Designs for lodges and park entrances.
4o. 12″. 7 pp. *and* 48 plates. London: *Printed for* Priestley and Weale. 1833.

TOPOGRAPHY

DELAMOTTE (W. ALFRED)
Original views of Oxford, its colleges, chapels and gardens from drawings made by W. A. Delamotte . . . with historical and descriptive notes by Charles Ollier.
la. fo. 21½″. London: T. Boys. 1843.

Review of Periodicals

Within the self-imposed limit of these pages attempt is made in this review to refer to the more important articles in all the Journals received by the library. None of the journals mentioned are in the loan library, but the librarian will be pleased to give information about prices and where each journal can be obtained. Members can have photostat copies of particular articles made from journals in the library.

CIVIC BUILDINGS

ARCHITETTURA. (*Rome.*) *Vol. XII, No. 12. December.*
Illustration of several designs for a large building for the finance and advocates' departments of the State of Naples (1st premium, Marcello Canino); the perspective of an unusual and interesting library in one of the designs is given.

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV. 3rd Series. No. 9. December.*
A building for the "Caisse de Compensation" of Paris, includes small lecture theatre (200 seats), laboratories, medical examination rooms and clinic, gymnasium, etc.

ARCHITECT AND BUILDING NEWS. *Vol. CXXXVII, 3398. 2 February.*
The Cité-Refuge of the Salvation Army, Paris (Corbusier and Jeanneret) is well illustrated and briefly described.

TRANSPORT BUILDINGS

ARCHITETTURA. (*Rome.*) *Vol. XII, No. 11. November.*
The Marine Station at Genoa (Luigi Vietti), a simple concrete building, also an article on the construction of the Florence terminal station.

PROFIL. (*Vienna.*) *Vol II. No. 1. January.*
Designs submitted for the rebuilding of the bridge over the Donau at Vienna.

ARCHITECTS' JOURNAL. *Vol. LXXIX. No. 2036. 25 January.*
The greater part of this number is given to a lively discussion of the interior decoration of ocean liners.

LA CONSTRUCTION MODERNE. *Vol. XL. No. 17. 21 January.*
The Maritime Station at Cherbourg (R. Levavasseur); very good description by the architect, and many illustrations and plans.

OFFICE BUILDINGS

MON. F. BAUKUNST UND STÄDTEBAU. *Vol. XVII, No. 1. January.*
Industrial offices for Fichtel and Sachs, Schweinfurt, by Borratz and Scholer—very well illustrated and briefly described.

BYGGE KUNST. *Vol. XV, No. 12. December.*
Sortingsgaten 18, Oslo—a modern shop and office building, including on first floor a restaurant. (Magnus Poulsson.)

LA CONSTRUCTION MODERNE. *Vol. XLIX. 7 January.*
Illustrations and full description of the Paris "Shell" building.

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV. 3rd series. No. 9. December.*
Offices for *Le Jour*, Av. des Champs Élysées, Paris.

INDUSTRIAL

ARCHITECTS' JOURNAL. *Vol. LXXIX, No. 2,034. 11 January.*
Tobacco factory at Manchester, by W. A. Johnson [*A.*].

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV. 3rd series. No. 9. December.*
The U.S.A. forest products research laboratory at Madison, Wis. (Howe and Lescage).

BYGGMASTAREN, 1934. *Nos. 1 and 2. 10 and 17 January.*
Two long articles on design and construction of a large food factory, tinned meats, etc., at Stockholm (architects, Sundahl and Rockstrom; engineer, Strokirk), many detailed plans and photographs.

EDUCATIONAL BUILDING

ARCHITECTS' JOURNAL. *Vol. LXXIX, No. 2034. 11 January.*
The Institute of Pathology, Leeds (J. C. Proctor and F. L. Charlton [*FF.*]), an interesting building, modern in purpose and design; ground, 1st and 2nd floors, classrooms, small laboratories, etc.; top floor large museum.

ARCHITECTS' JOURNAL. *Vol. LXXIX, No. 2035. 18 January.*
Article by the architect (P. Karantinos) on new State schools in Greece. Contains some useful details.

ARQUITECTURA. (*Madrid.*) *Vol. XV. No. 173. September, 1933.*
Designs submitted in national competition for a museum of modern art, Madrid.

HOSPITALS

L'ARCHITECTURE VIVANTE. *Autumn, 1933.*
Special Hospital Number, illustrating in great detail Aalto's Paimio Sanatorium, also a "maison de retraite pour vieillards" at Frankfort-on-Main (Stam, Moser and Kramer), a Russian sanatorium in the Caucasus, operating theatres at Potsdam and elsewhere, the Bella Lui Sanatorium at Montana-Wallis, Switzerland (Steiger and Itten), Zonnenstraal Sanatorium, Hilversum (Byvoet and Duiker), sanatorium at Los Angeles (Neutra), etc. All modern buildings of great technical and architectural interest. The whole number is of value as a reference.

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV. 3rd series. No. 9. December.*
Plan and brief description of Maritime Hospital at Lorient, at present under construction; 400 beds; 16, 6 and single bed wards.

SPORTS BUILDINGS

BAUGILDE. (*Berlin.*) *Vol. XVI, No. 1. January.*
This number contains the first illustrations of the designs for the lay-out of the 1936 Olympic Games Stadium at Berlin. (Architect, Werner March.)

CASA BELLA. (*Milan.*) *Vol. VI. No. 12. December.*
Stadia and swimming baths—special articles written by the architects of some of the best recent examples—very well illustrated with numberless plans and diagrams. The number includes the first illustrations of the recreation centre of Nuremburg (O. E. Schweitzer), containing two open-air baths, large and small, sun-bathing space of 13,600 sq. metres, stadium for

2,500 spectators, tennis court, football grounds, etc., and restaurants: one of the most complete schemes of recent years. The Vienna stadium (O. E. Schweitzer) and the Turin stadium (Bianchini Fagnoni & Ortensi) are also illustrated very well. Also articles on bathing places and municipal gymnasia.

BOUWKUNDIG WEEKBLAD. *1934, No. 3. 20 January.*
Schemes for a sports centre in Amsterdam-West (Arthur Staal and C. Wegener-Sleeswijk): gymnasium, stadium, tennis courts, football grounds, etc.

MON. F. BAUKUNST UND STÄDTEBAU.
The Mussolini Stadium, Turin (Bianchini, Fagnoni, and Ortensi). This is another of the superb modern Italian stadia—a simpler structure than the Berta Stadium at Florence, but even more dramatic in its effects.

ARCHITETTURA. *(Rome.) Vol. XII, No. 11. November.*
Yet another stadium—the designs for a great concrete stadium at Rome by Luigi Nervi and Cesare Valle, drawings, plans, model and description; seating 100,000 and standing an additional 20,000. Cost Lire 23,500,000 (L. 200 per spectator).

ARCHITETTURA. *(Rome.) Vol. XII, No. 12. December.*
A large public bath at Dresden (Paul Wolf), illustrated by good plans and photographs. The building includes a swimming bath, about 90 feet long, and accommodation for numerous special types of therapeutic bathing.

ARCHITECT AND BUILDING NEWS. *Vol. CXXXVII, No. 3,395. 12 January.*
Ashridge Park Golf Club House (W. S. Grice and O. Poulton [*F. & A.*]).

DOMESTIC

ARCHITECTS' JOURNAL. *Vol. LXXIX, No. 2034. 11 January.*
The latest of the large Liverpool tenement buildings by L. H. Keay [*F.*] is well illustrated and described; also a block of flats in Sloane Avenue, Chelsea, by G. K. Green.

MON. F. BAUKUNST UND STÄDTEBAU. *Vol. XVII, No. 1. January.*
A house on Lake Maggiore, built by Herbert Noth for himself. Two seaside houses (Otto Firle), one of which has a particularly interesting plan; thatched roofs.

ARCHITECTURAL REVIEW. *Vol. LXXV. No. 447. February.*
The one-roomed flat, article and illustrations of several examples.

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV. 3rd series, No. 9. December.*
Un hôtel particulier, Rue St. Guillaume, Paris, by Pierre Chareau. This doctor's house is of particular interest as marking a definite step forward in the development of extreme-functionalist architecture.
Un hôtel particulier, at Paris, by Pierre Chareau and Bivoet. A very interesting building, making a definite step forward in the development of functionalist architecture.

ACOUSTICS

BYGGMÄSTAREN. *20 December.*
The Acoustics of Auditoria. Article by J. H. Sager.

ARCHITECTURAL FORUM. *Vol. LX. January.*
Brief description and illustrations of the Mabel Shaw Bridge Music auditorium, Claremont, Calif. (W. J. Johnson), 2,000 seats, acoustic design to give ideal conditions for both singing and instruments.

CONSTRUCTION

BULLETIN TECHNIQUE DE LA SUISSE ROMANDE. *Vol. LX, No. 1. 6 January.*
An illustrated description of the excavation for and construction of the new basement lecture theatre in the Conservatoire Nationale des Arts et Métiers at Paris.

ARCHITECTS' JOURNAL. *Vol. LXXIX. No. 2037. 1 February.*
The Concrete Code, an explanatory article by W. E. J. Budgen, B.Sc., A.M.Inst.C.E., A.M.I.Struct.E.

L'ARCHITECTURE. *(Paris.) Vol. XLVII. No. 1. 15 January.*
Noise insulation: a useful article on noise insulation. This journal now has a special large technical section.

ARCHITECTURAL FORUM. *Vol. LX. January.*
Article on the use of Aluminium foil for insulation.

EQUIPMENT

LA TECHNIQUE SANITAIRE ET MUNICIPALE. *Vol. XXVIII, No. 11. November.*
This number contains the papers read to the Congress of l'Association générale des Hygiénistes and Techniciens Municipaux, held at Toulouse in July. The leading paper by Augustin Rey on sunlight and air in buildings is printed in full with numerous diagrams and plans illustrating his schemes for the optimum use of light and air by employing splayed reflecting surfaces in rooms and special ventilating devices. The paper is imaginative and of great interest; it deserves close study.

THE HEATING AND VENTILATING ENGINEER. *Vol. VII, No. 79. January.*
An article on the use of built-in rubbish incinerators for flats and abstracts of a paper by S. Adams on gas and coke fired boilers for central and domestic water heating, and report of a debate at the Institute of Fuel on the respective merits of oil and coal, etc., for domestic central heating.

THE WESTERN SOCIETY OF ENGINEERS. *(Evanston, Illinois.)*
House heating requirements: (1) methods of calculating heat loss and its relation to equipment selection; (2) the features of gas-fired equipment.

THE ELECTRICAL SUPERVISOR. *Vol. XIV, No. 4. January.*
Electric Heating of Buildings; an article by E. M. A. Young. A good general description of the leading methods of heating by electricity, includes comparison of the costs of heating by electricity and hot water, considerably in favour of the former.

ARCHITECTURAL REVIEW. *Vol. LXXV. No. 447. February.*
R. O. Sutherland on Architectural Lighting—much useful information.

ARCHITECTURAL ASSOCIATION JOURNAL. *Vol. XLIX. 563. January.*
Article on the stage lighting of concert halls, music pavilions and assembly halls, by C. H. Ridge and F. S. Aldred—a valuable article.

BUILDING COSTS

BUILDING. *Vol. IX, No. 1. January.*
A useful article illustrated by tables and diagrams on comparative costs of brickwork, showing material and labour costs for various qualities of brick in various forms of walling.

TOWN PLANNING

LA CONSTRUCTION MODERNE. *Vol. XLIX, No. 16. 14 January.*
1st Premiated design (equal with two others), by M. M. Viret, Marmorat et Monnoyer, in the Antwerp plan competition.

ARCHITETTURA. (*Rome.*) *Vol. XII, No. 12. December.*
The official control plan for Benevento described at length and well illustrated.

LA TECHNIQUE SANITAIRE ET MUNICIPALE. *Vol. XXVIII, No. 11. November.*
Augustin Rey, whose papers in this JOURNAL on light and air are noted above, also writes on American sky-scrapers and their possible application to the needs of European cities. This is followed by a comparative study of building height regulations in a number of towns in France, Belgium and Switzerland.

INTERNATIONAL HOUSING AND TOWN PLANNING BULLETIN. *No. 33. December.*
Illustrated report by W. C. K. Baumgarten on the planning of industrial areas in the U.S.A.

L'ARCHITECTURE. (*Paris.*) *Vol. XLVII, No. 1. 15 January.*
A long article by Pierre Lavedau, with many illustrations of the planning and rebuilding schemes for Marseilles. (P. Lavedau is author of the best known French book on town planning.)

JOURNAL OF THE TOWN PLANNING INSTITUTE. *Vol. XX, No. 3. January.*
Criticism of the winning plans in the Stockholm competition.

L'ARCHITECTURE D'AUJOURD'HUI. *Vol. IV, 3rd series. No. 9. January.*
The latter half of the journal is devoted to town planning and architecture in the U.S.A., with monograph on the work of Howe and Lescaze.

ARCHITECTURAL DETAIL

PENCIL POINTS. *Vol. XV, No. 1. January.*
Illustrated notes on cupolas and lanterns in the "Comparative Architectural Details" series.

ARCHITECTURE. (*N.Y.*) *Vol. LXIX, No. 1. January.*
Exterior plasterwork—a brief article and many excellent examples, mostly East Anglian.

HISTORICAL AND ARCHÆOLOGICAL

ARCHITECT AND BUILDING NEWS. *Vol. CXXXVII, No. 3,395. 12 January.*
Mr. John Summerson [*A.*] contributes a delightfully-written scholarly article on the Nash buildings of Regent's Park. The title, "The Crown Commissioners' Inheritance," reveals an incidental purpose of the article as an obituary of many of the nineteenth-century buildings which are to be demolished, but it has an importance as being the first serious study to be made of Nash's work and the basis of wider study. The article is illustrated by 15 photographs and plans.

THE QUARTERLY ILLUSTRATED OF THE RY. INC. OF ARCHITECTS IN SCOTLAND. *No. 44. Autumn 1933.*
The Quarterly contains an interesting article on John Milne, a Scottish architect of the Caroline period, by W. G. Blaikie Murdoch, and an appreciation of the work of the late A. Marshall Mackenzie [*F.*], by H. H. Wigglesworth [*F.*]. Both articles are illustrated.
Articles on Craig's Close, High Street, Edinburgh, by E. J. Macrae [*A.*], an eighteenth-century tenement and on the Norman Church of Rutherglen.

GAZETTE DES BEAUX-ARTS. (*Paris.*) *Series VI. Vol. XI, No. 852. January.*
A long study by M. Charles Tolnay on Michael Angelo and the Façade of San Lorenzo. The schemes put forward by Michael Angelo for the façade were his first purely architectural works. As an appendix are printed fourteen letters from Domenico Buoninsegni to Michael Angelo.

JOURNAL OF THE WEST YORKS SOCIETY OF ARCHITECTS. *Vol. II, No. 3. December.*
The first instalment of a paper by T. Butler Wilson [*F.*], on the life and work of Cuthbert Brodrick (b. 1822), architect of the Leeds Town Hall.

BURLINGTON. *Vol. LXIV, No. 370. January 1934.*
An illustrated article on a suggested reconstruction of the façade of the Church of St. Gilles (Gard), France, by Richard Hamann. The article suggests that the pairs of coupled columns which project on either side of the central doorway are not now placed according to the original design, and should be against the wall of the central doorway, the statues at present in that position being placed in niches on the intermediate walls.

JOURNAL OF THE ROYAL SOCIETY OF ARTS. *Vol. LXXXII, No. 4233. 5 January.*
A paper by E. J. H. Mackay describing excavations at Mohenjo-daro since 1927.

JOURNAL OF THE ROYAL SOCIETY OF ANTIQUARIES OF IRELAND. *Vol. LXIII, Pt. ii. 31 December.*
Rathmore Church, County Meath—detailed historical and architectural description by H. G. Leask. Many illustrations and plan.

PENCIL POINTS. *Vol. XIV, No. 12. December.*
Early colonial timber cottages in Massachusetts are described and illustrated in an article by D. O. Brewster.

ARCHITECTURAL REVIEW. *Vol. LXXV, No. 447. February.*
Article and illustrations of Stroud Valley, Gloucestershire, eighteenth and early nineteenth century factories.

RESTORATION WORK

ARCHITECT AND BUILDING NEWS. *Vol. CXXXVII, No. 3,395. 12 January.*
An article illustrated by plans and several photographs of the work of restoration at St. Mary Redcliffe Church, Bristol (Oatley and Lawrence [*FF.*]).

GENERAL

ARCHITECTURAL ASSOCIATION JOURNAL. *Vol. XLIX, 563. January.*
Mr. Hope Bagenal's paper to the Architectural Association on the architect's contribution to the thought of his time is printed in full.

Review of Practice

BOSSOM PRIZE, 1933

REPORT BY MR. G. D. GRIFFITHS ON THE FINANCING OF

AN EXCHANGE AND OFFICE BUILDING

General Description

The site is taken as being situated in London, and the building is designed to meet the requirements of the L.C.C. Byelaws.

The exchange is situated in the centre of the ground floor, with central entrances from each of the four streets. The twenty-eight Members' Rooms are arranged immediately around the exchange, all these having either complete or partial top light. Telephone box units are provided in the ante and at each of the subsidiary entrances. The lavatories are situated *en bloc* in the basement.

The external premises will be let as complete units with mezzanine floor and basement. Each of these have their own strong rooms and book lifts. The men's lavatories are situated in the basement and the ladies' on the mezzanine floor. These premises are provided with subsidiary entrances from the main entrance vestibules in addition to their enternal entrances.

The offices on the upper floors are served with lifts, staircases and lavatories, with special regard to future subdivision and circulation. Men's and ladies' lavatories are placed on alternate floors. The men's lavatories may be subdivided to provide further principals' lavatories in addition to the separate unit provided on each floor off the main stairs. Postal chutes serving all floors are situated at each entrance.

The basement is retained for all services and storage, as well as a block of especially constructed strong-rooms for tenants on upper floors.

The housekeeper's flat is situated on the seventh floor.

Heating, ventilating, water supply, and cleaning are described under their separate headings.

The building is of steel frame construction with brick panels and is faced externally with a granite base and Portland stone above.

The area is faced with glazed bricks and the small rooms are lit with pavement lights, subdivided into large squares.

STATEMENT

Cost

	£	s.	d.
Site	224,400	0	0
Legal Charges	376	10	0
Stamp Duty	2,244	0	0
Compensation of Tenants (*Nil*)	—		
Demolition (*Nil*)	—		
Building	315,848	10	0
Architect's Fees	18,950	0	0
Interest on Capital during construction	21,066	0	0
Interest on Capital during first letting (*Nil*)	—		
Total cost	£582,885	0	0

Gross Income

	£	s.	d.
Rents. (See detailed schedule)	90,741	10	0
Heating. (See separate statement)	2,047	10	0
Cleaning. (See separate statement)	3,007	0	0
	£95,796	0	0

Outgoings

	£	s.	d.
Void Contingencies	4,537	0	0
Letting Agents' Commission	907	0	0
Management	2,268	10	0
Rates	15,205	10	0
Water Rate	2,211	10	0
Insurance of Building	236	10	0
Insurance of Tenants' Offices	65	0	0
Third Party Insurance on Lifts	22	0	0
Third Party Insurance on Boilers	3	0	0
Running Cost of Lifts	180	0	0
Maintenance of Lifts	288	0	0
Heating	1,950	0	0
Cleaning	2,864	0	0
Wages:—			
Porters	520	0	0
Lift Attendants	624	0	0
Housekeeper	260	0	0
Mechanics	416	0	0
Health and Unemployment Stamps, W.C.A.	172	0	0
Staff Uniforms	120	0	0
Redecorations and Repairs	2,550	0	0
Lighting of Public Corridors and Staircases, etc.	1,595	0	0
Cleaning of ditto	608	0	0
Window Cleaning to Staircases and Lavatories	104	0	0
	£37,707	0	0

Summary

	£	s.	d.
Gross Income	95,796	0	0
Outgoings	37,707	0	0
Net Income	£58,089	0	0
Total Capital Outlay	£582,885	0	0
Net Annual Income	£58,089	0	0
Profit	9.9 per cent. per annum		

Note.—This scheme, showing a profit of 9.9 per cent., would enable it to be handed over to another company as a capital investment of, say, 7 per cent., leaving 2.9 per cent. for the promoters.

LETTING SCHEDULE

Floor	Position	Areas	Rent per Sq. Ft. s.	d.	Rentals £	s.	d.
Basement	London St.	6,200	4	0	1,250	0	0
	Exchange St.	5,508	4	0	1,101	10	0
	Market St.	5,508	4	0	1,101	10	0
	Good St.	5,796	4	0	1,159	0	0
	Storage	2,716	4	0	543	0	0
	Strong Rooms	14 off.	£200 ea.		2,800	0	0
Ground Floor	London St.	4,510	15	0	3,383	0	0
	Exchange St.	3,178	12	6	1,986	0	0
	Market St.	3,178	12	6	1,986	0	0
	Good St.	5,994	10	0	2,997	0	0
	Exchange, including Members' Rooms and Ante	11,560	15	0	8,670	0	0
Mezzanine Floor	London St.	2,090	8	0	836	0	0
	Exchange St.	1,683	7	6	631	0	0
	Market St.	1,683	7	6	631	0	0
	Good St.	2,448	7	0	851	0	0
First Floor	London St.	5,582	13	0	3,630	0	0
	Exchange St.	4,364	11	6	2,510	0	0
	Market St.	4,364	11	6	2,510	0	0
	Good St.	5,950	10	6	3,125	0	0
Second Floor	London St.	5,582	11	6	3,204	10	0
	Exchange St.	4,364	10	6	2,291	0	0
	Market St.	4,364	10	6	2,291	0	0
	Good St.	5,950	10	0	2,975	0	0
Third Floor	London St.	5,582	10	6	2,930	10	0
	Exchange St.	4,364	9	6	2,073	0	0
	Market St.	4,364	9	6	2,073	0	0
	Good St.	5,950	9	0	2,677	10	0
	Carried forward				£62,016	10	0
Floor	Position	Areas	Rents per Sq. Ft. s.	d.	Rentals £	s.	d.
	Brought forward				£62,016	10	0
Fourth Floor	London St.	5,582	10	6	2,930	10	0
	Exchange St.	4,364	9	6	2,072	0	0
	Market St.	4,364	9	6	2,072	0	0
	Good St.	5,950	9	0	2,677	10	0
Fifth Floor	London St.	4,904	9	6	2,329	0	0
	Exchange St.	3,938	9	0	1,772	0	0
	Market St.	3,938	9	0	1,772	0	0
	Good St.	5,428	8	6	2,308	0	0
Sixth Floor	London St.	4,452	8	6	1,892	0	0
	Exchange St.	3,215	7	6	1,205	10	0
	Market St.	3,215	7	6	1,205	10	0
	Good St.	4,056	7	0	1,419	10	0
Seventh Floor	London St.	4,452	8	0	1,781	0	0
	Exchange St.	3,215	7	0	1,125	0	0
	Market St.	3,215	7	0	1,125	0	0
	Good St.	3,196	6	6	1,938	10	0
	Total Gross Rentals				£90,741	10	0

N.B.—Rentals of the Office Floors (1st-7th) are inclusive of rates.

Rentals of Ground Floor, Basement and Mezzanine are exclusive of rates.

The above rental areas are gross, and the amount per sq. ft. allowed is such that the Tenant pays for his proportion of inner circulating corridors.

EXPLANATIONS OF ITEMS IN STATEMENT

Legal Charges : These are worked out on the correct scale for land transfer work.

Stamp Duty : This is 1 per cent. of site cost.

Demolition : It is considered that the buildings to be demolished are of good condition and will not cost anything to have them removed.

The Building Cost : See separate Statement with cube.

Architects' Fees : 6 per cent. on building cost (R.I.B.A. Scale of Charges).

Interest on Capital during Construction : This has been taken at 5 per cent. on 50 per cent. of the capital for the period of construction (18 months).

Interest on Capital during First Letting : This will be *nil*, as the Association will take occupation as soon as building is completed.

Rents : See separate schedule. It is understood that the Association will form a Building Company, and this company will let off the whole building; the Association of the Exchange taking over the Exchange members' rooms and ante ground floor.

Void Contingencies : Unlets, etc., are taken at 5 per cent. of gross rental income.

Letting Agents' Commission : This will be an annual outgoing of 1 per cent. on the gross rentals.

Management : This is taken at 2½ per cent. of the nett rentals.

Rates : These are taken at 10s. in the £ on 50 per cent. of the upper floor gross rentals. The tenants on the ground floor pay their own rates.

Water Rate : See advice *re* wells. The water rate is taken at 6½ per cent. of the total rateable value. Since this is an office building, this rate is subject to a 25 per cent. rebate.

Insurance of Building: This is taken at 1s. 6d. per cent.

Insurance of Tenants' Offices: This is taken at 1s. 6d. per cent. of nett rental income.

Housekeeper's Salary: This will include a rent-free flat on the 7th floor.

Redecorations and Repairs: This is taken at just over 3s. 4d. per cent. of building cost.

Lighting to Public Corridors, etc. This has been taken on the assumption of 5d. per unit.

HEATING, VENTILATING AND WASTE-PAPER DISPOSAL.

The heating generally is provided by means of ceiling panels situated above all windows, finishing flush with the ceiling, and heated by steam. This system, although costing more to instal, has a much lower running cost than the usual wall radiator system.

There will be pipe coils under all roof lights and throughout the basement.

The exchange will have plenum ventilation, and there will be mechanical extract ventilation to the whole of the basement,

the ducts having fusible link dampers on both sides of all division walls to external premises.

The oil fuel stove will have natural inlet and extract ventilating ducts connecting direct to the open air.

The members' lavatories in the front of the basement will have separate mechanical extract ventilation with duplicating fans on the roof. This duct is situated immediately behind the two main lifts to London Street.

The destructor for waste-paper is in the heating chamber, its flue being provided with dampers to cut it off from the main flue, the ashes passing through a water bosh.

Statement.

Running cost of heating system, including hot-water supply to 200 fittings (oil fuel) ..	£1,750	0	0
Maintenance of system	200	0	0
(Wages addition—see Report.)			
	£1,950	0	0

The owners are entitled to make a reasonable profit on the heating (say, 5 per cent.). Therefore the running cost of the heating, exclusive of wages, plus 5 per cent.—£2,047 10s., would be subdivided amongst the tenants at so much per 100 sq. ft.

CLEANING

The cleaning of staircases, public corridors, lavatories and their respective windows will be an annual outgoing of the owners, and appears in the financial statement as such.

The tenants of the external premises which are intact will do their own cleaning.

The cleaning of lettable space of office floors and exchange, which will be carried out by the owners and paid for proportionally by the tenants, will show a reasonable return of 5 per cent. The tenants will do their own window cleaning.

The undermentioned figures include wages, materials, Health and Unemployment Insurance, and Workmen's Compensation Act.

Cost of cleaning 143,200 sq. ft. of lettable floor space, at £2 per 100 sq. ft. per annum ..	£2,864	0	0
Profit, 5 per cent.	143	0	0
Total	£3,007	0	0

WATER SUPPLY

I consider it inadvisable to sink wells in London at the present time owing to the uncertainty of adequate future supply.

5 per cent. on £4,000 capital required for sinking two wells	£200	0	0
Maintenance of pumps	20	0	0
Cost of pumping, 12s. per day	220	0	0
	£440	0	0

The water rate being £2,211 10s., the above figures show that by the company sinking their own wells they could possibly save £1,771 10s. per annum, if they were prepared to take the risk of water shortage in the future, and the inconvenience of possibly having to connect with the street mains at a later date.

Private Housing Enterprise*

Two correspondents this week have controverted the recent argument of Sir Enoch Hill that the Housing Act of 1933 is or can be made a sufficient solution of the housing problem. Mr. Nicholson has put some detailed questions which are prompted by the discrepancy between the reported statement of Sir Enoch Hill on 23 January that he could build houses to let under the Act at 10s. a week exclusive of rates, and his statement on 27 January that half these houses could be let at 10s. and the other half at 11s. a week inclusive of rates. But, as another correspondent has pointed out, it does not really matter which figure is correct, because both are more than the bulk of the working classes can afford. The famous case of the slum clearance scheme at Stockton-on-Tees shows that the more poorly paid wage earners will make great sacrifices to rent decent accommodation, but that it is extremely bad for public health that they should be tempted to do so. These facts destroy the assertion, which is the basis of Sir Enoch Hill's case—namely, that the artisan is the person "most in need of a house to-day." It is far more credible that previous Housing Acts and indeed the hire-purchase schemes, which it is the normal activity of building societies to finance, have supplied and can supply the needs of this class; and if the best that the Act of 1933 can do is to provide, in the face of the great difficulties described by Sir Enoch Hill, houses for artisans to rent instead of to purchase, it is at most an addition to a well-stocked armoury and no new weapon at all. The Minister of Health himself has never claimed that the Act unsupplemented would solve the housing problem, and it would be just as foolish to advance such a claim as to say that the Act has no value at all.

It has considerable value. For example, it ended the unnecessarily expensive system of a general subsidy to municipal building, and thus opened to private enterprise the field of building cheap but good houses, and there is no doubt that in favourable circumstances results can be secured, such as are indicated in the letter from Mr. Boot which we publish this morning. But its provisions for organising private enterprise to take advantage of this chance, and for stimulating private enterprise to provide the type of house really needed on a

* Reprinted from "The Times" of 3 February by permission of the Editor.

nation-wide scale, are quite inadequate. Some, but not all, building societies are ready to work the Act. This means that the private builder can obtain from some, but not from all, societies 90 per cent. of the cost of the houses at 4 to 4½ per cent. He has to borrow elsewhere or himself to find the remaining 10 per cent., and this means, according to friendly comment in the House of Commons when the Act was passing, that the cost to the builder on the whole outlay will be 6 to 6½ per cent. Moreover the building societies or the builder have to obtain a guarantee from local authorities in respect of about 14 per cent. of the total cost. This guarantee, according to Sir Enoch Hill, the local authorities are most reluctant to give, in spite of the fact that they themselves find no difficulty in obtaining from the Ministry of Health a guarantee of part of their guarantee. The explanation is very simple. If they are energetic housing authorities they will be reluctant to give the guarantee because they hope some day to be helped by the Government to build the houses themselves. If they are not energetic, then they will not wish to give the guarantee because they will not care whether the houses are built or not. It is not therefore surprising that the Act is failing to produce houses swiftly and cheaply enough to meet the urgent demand for low-rented houses, though it may help in a modest way to meet a now less urgent and extensive demand for higher rented houses.

The Act has indeed done more to define the housing problem than to solve it. It has become clear that local authorities are not going to meet the demand, especially when they are occupied with an admirable scheme of slum clearance. In such circumstances it does no good to repeat, as the Government are too fond of doing, the technical truth that local authorities are responsible for meeting the housing needs of their areas. The only important question is whether they will meet them now or help others to meet them. It is also clear that private enterprise is not to be induced at the moment to meet those needs under the terms of the 1933 Act. No useful purpose, therefore, is served by the speculation that private enterprise may turn to building houses to let when the demand for houses built to sell is exhausted. Statesmanship cannot take the risk that this change-over may not take place. The need for the houses is too great; the economic and social arguments for their rapid construction are too strong; and present unemployment in the building industry is too heavy. The Act of 1933 has demonstrated the need for co-ordinating the house-building resources of the whole country. That, and not its practical nor its probable results, is its chief virtue.

Enough has been said to show that there is something like chaos in housing policy. Local authorities are busy draining the dregs of the Act of 1924 and will, it may be hoped, be busier still for some years in operating energetically the Act of 1930. One of the misfortunes of having allowed housing to become a political issue is a certain antagonism between those who ought to be allies—namely, local authorities and private enterprise. Private enterprise itself is struggling and straggling along, building houses for sale, building a few houses to let, and repairing and reconditioning houses. Building societies and other public utility societies are doing valuable but sporadic work. Is there no means of co-ordinating and expanding this piecemeal system, which, whatever else it is doing, is not producing an ample and regular supply of good houses to let cheaply? Speed and volume of supply are necessary to satisfy public demand. Regularity of supply is necessary to prevent fluctuations in prices and costs. It is true that any new system would take time to organise; but that is only a reason for beginning quickly, and in any case where is the proof that the present system will ever provide the houses at all? Of all the new systems suggested, that of a national public utility society, financed either by a Government loan, or preferably by subscriptions attracted by a Government guarantee, appears the most promising. It has been said that this would be a method of restoring a general subsidy. That is mere pedantry. The records of many existing societies show that the return from the houses would be sufficient for the service of such a loan as could be raised upon a Government guarantee. The Chairman of the Westminster Bank declared in his speech on Wednesday that he regarded the policy of slum clearance "as not only in the nature of public utility but as a national investment of a high order"; and if that is true of slum clearance it is even more true of new building, which is an infinitely less expensive enterprise. It has also been said that so big a society could not be efficiently staffed. That argument is incredible after the experience of the past twelve years; and the Government, in virtue of its essential contribution to the scheme, would have the right to insist that the whole field of existing talent should be searched for a suitable staff. In any case the experiment might be tried out in some area large enough to show whether the difficulties anticipated do in fact arise. Finally, some such step is suggested by the Government's own treatment of the housing problem. They have rightly concentrated the attention of local authorities upon slum clearance. They have rightly recognised the contribution which private enterprise can make towards building houses to let. It remains to make sure that private enterprise does make that contribution on lines which will rule out potential slums, waste of effort, profiteering and other symptoms of a lack of organisation.

Correspondence

HOUSES AT LOW RENTS

National Housing and Town Planning Council,
41 Russell Square,
London, W.C.1

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Housing reformers will derive little satisfaction from the optimistic statement recently made to the Press by Sir Enoch Hill, chairman of the Halifax Building Society, regarding the results of the Housing (Financial Provisions) Act, 1933. It is, of course, gratifying to learn that this important society, which was one of the principal sponsors for the Act, has now approved or granted loans involving £1,290,303 for house construction under the new guarantee scheme. Unfortunately, however, there is no official news as to the loans granted by other Building Societies in Great Britain for the erection of houses to let under the Act. From all accounts it seems hardly likely that the scheme will produce more than a few thousand houses—mostly of relatively low standard—per annum, whereas the popular Wheatley Act of 1924, before its repeal, was producing annually some 60,000 well-constructed houses for letting at standard rents.

It is indisputable that the Building Societies have rendered much valuable service to the nation by assisting hundreds of thousands of persons to purchase their own homes, but their operations are not likely to result in the production of the large numbers of cheaply rented dwellings that are so urgently needed in many parts of the country. Actually, the terms arranged by the Building Societies with the Minister of Health under the Act of 1933 are that advances will be made for a period of 30 years at 4 per cent. in the North and Midlands and at 4½ per cent. in London and the South. These terms compare most unfavourably with the rate of 3½ to 3⅝ per cent., with repayment spread over 60 years, at which Local Authorities can now borrow for housing purposes. It is manifestly unfair that in these difficult times the poorer classes should be expected to occupy houses the construction of which has been financed on the relatively onerous terms offered by the Building Societies.

May I appeal, therefore, to Sir Hilton Young to permit Local Authorities to proceed freely with house-building schemes wherever there is a real shortage of working-class dwellings? Why should not the clearance of slums and the abatement of the gross overcrowding that exists among the poorer classes living outside unhealthy areas proceed side by side?—Yours, etc.,

JOHN G. MARTIN,
Secretary, National Housing and Town Planning Council.

THE ABSENCE OF PRACTICAL WORK IN SCHOOL ARCHITECTURAL TRAINING

9 Gray's Inn Square,
London, W.C.1
31 January 1934

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—The President in his address to students has put his finger on the weakest spot in modern architectural training, i.e. the lack of sufficient personal contact with practical work.

In the education of young engineers long periods in the shops are considered to be an important and even vital item in all educational curricula. In addition, time has to be, and is, found for indoor work on a long range of difficult theoretical subjects for the drawing office, the laboratory, and the test room, a programme which is at least no less onerous than the studies of the typical architectural student. B.Sc. (Eng.) certainly connotes no less brain work than B.A. (Arch).

Even the old discredited (and often discreditable) pupilage system had the advantage of occasionally affording time for an intelligent youngster to roam about buildings in progress with his eyes open.—Yours faithfully,

PERCY J. WALDRAM.

NEW MATERIALS AND NEW METHODS

173 Oxford Street,
London, W.1
30 January 1934

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—I am grateful to Mr. Percival Fraser for pointing out two careless mistakes which I allowed to be printed in your paper.

Two feet 6 inches dimensions for windows should, of course, have been 1 foot 8 inches, as is well known, and 6 feet is the width for linoleum and not 5 feet.

The other criticisms on closer examination will prove non-applicable.

The general thesis of my paper required only a random selection for comparison and not a detailed dimensional statement. For that reason the term "standardization" and the context of my argument was used as a general conception, a term which might be applied to all commonplace, repetitive, essential things, and not as a particular term employed by the B.S.I.

It seems that Mr. Fraser does not disagree with the principles involved, which, summarized, amount to the necessity for intelligent collaboration between architect and manufacturer in order to eliminate waste and facilitate the work of both.

I am anxious, like many others, that some form of collaboration between architects should be found to determine some basic units in the very near future in order to facilitate the essential completion of a building programme affecting six million houses for the working classes.

Finally, the Japanese mat was cited as a unit of measurement and not as a mat of fibre lying in the wood and paper house.—Yours faithfully,

S. CHERMAYEFF [*F.*].

Orchard Farm,
Eastcote,
Middlesex
24 January 1934

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I had not the courage to add my contribution to the debate which followed the paper on "New Materials," and venture, therefore, to do so here.

Speaking—or if you prefer it—writing as another *young architect,* I had the good fortune (36 years ago) to start in an

office where they were working on exactly the same lines as advocated by Mr. Chermayeff.

My relations and friends (to whom I showed some of our designs) were at that time much amused and frankly prophesied my eventual arrival at Colney Hatch or Hanwell—actually the style was known in some quarters as the "Mad" style.

Circumstances or fate or something then decreed that I saw experience in a variety of other drawing offices where I was not allowed to develop my particular madness, and consequently became thoroughly saturated with "Period" work.

Having thus been through both phases, the "Modern" and the "Traditional," I find my attitude towards the so-called "new" style interesting (whether anyone else will think so is another matter).

Of course, I am enthusiastic, and it is a great pleasure to find the style being more favourably received than it was 30 years ago. What concerns me, however, is the question of ornament. Are we right in pushing it overboard as appears to be the tendency now?

Pictures, sculpture and statuary are also in disgrace. If ornament is to be thus ruled out, what will eventually become of our craftsmen? The modeller, carver, artist and metal worker, are they to be allowed to die out and their secrets and skill perish with them? Then, again, if this perfectly plain stark functionism is persisted in, are we not running the risk of reaction and a return to over-ornamentation?

Nature has always been our inspiration, why shouldn't we go to nature now for forms to relieve the plain masses?

There are plenty of cultured people, as for example the Bishop of Birmingham, to whom the style in its present severity does not appeal.

I submit that it is the duty of architects to try to make the style appeal to such, and at the same time provide employment for the craftsman.

EDWIN S. HARTLEY (*L.*).

Notes

VICE-PRESIDENT'S ENGAGEMENTS

Mr. Maurice E. Webb (Vice-President) has attended or will be attending the following dinners in place of the President—

Annual Dinner of the Institution of Electrical Engineers on 8 February, and the Annual Dinner of the Illuminating Engineering Society on 13 February.

Mr. L. Sylvester Sullivan, Member of Council, will represent the President at the dinner of the Institution of Heating and Ventilating Engineers on 14 February.

R.I.B.A. CONCERT

The Programme of the Concert to be held on 19 February at the Institute will be as follows:—

1. QUARTET in D major (K.285) for flute and strings *Mozart*
   URSULA WATERHOUSE, M. MICHAELS, NORA WILSON, W. H. EVANS.
   (This quartet and two concertos for the flute were written in 1777 while Mozart was at Mannheim, where he made friends with Windling. Ramm and Ritter, "excellent performers on the flute, oboe and bassoon," and members of one of the finest orchestras in Germany.)

2. DUETS (*a*) "Vo Cercando" *D'Astorga* (1680-*c.*1750)
   (*b*) "Hark From Every Tree" .. *H. Purcell*
   BETTY ANDREAE, ANNE HUXLEY, URSULA WATERHOUSE, GILBERT ENGLEFIELD, AND STRING QUARTET.
   (The duet, "Hark From Every Tree," is from the Ode on St. Cecilia's Day, 1692, arranged and edited by W. G. Whittaker, and is taken from "Orpheus Britannicus," a posthumous collection of favourite Purcell numbers.)

3. SONGS.
   LEWIS WATSON.

4. TRIO in D minor for flute, oboe and piano
   J. B. Locillet (1653-1728)
   URSULA WATERHOUSE, ELIZABETH KITSON, DERIC HETLEY.
   (Jean Baptiste Locillet was born at Ghent. He came to London in 1705 as flautist in the opera at the Haymarket Theatre and died in England.)

Interval.

5. SOLOS (*a*) "Air Gai" *W. Rummel*
   (*b*) "Au bord de l'eau" *Fauré*
   (*c*) "L'Embarquement pour Cythère" *René Chansard*

6. VARIATIONS on the Londonderry Air *Frank Bridge*

7. SONGS.
   LEWIS WATSON.

8. DUETS (*a*) "Spring" *Armstrong Gibbs*
   (*b*) "Dirge for Fidele" *Vaughan Williams*
   (*c*) "Bells" *Herbert Howells*
   (*d*) "A-tishoo" *Armstrong Gibbs*
   BETTY ANDREAE AND ANNE HUXLEY.

Accompanist. DERIC HETLEY.

HOUSING AND TOWN PLANNING IN RUSSIA

Eugen Kaufmann, Dipl. Ing. Architect D.W.B. Stadtischer Baurat A.D., will give a Chadwick Public Lecture on Housing, Town and Regional Planning in Soviet Russia, in the Lecture Hall of The Royal Institute of British Architects, 9 Conduit Street, W.1, on Tuesday, 13 February, at 5.30 p.m.

Sir William J. Collins, K.C.V.O., M.D., M.S., B.Sc. (Chairman of the Chadwick Trustees) will preside. Admission free.

NOTES FROM THE MINUTES OF THE COUNCIL

8 JANUARY 1934

R.I.B.A. PRIZES AND STUDENTSHIPS

The Council approved the Annual Award of the R.I.B.A. Prizes and Studentships submitted by the Board of Architectural Education and appointed the Juries for the Prizes and Studentships for 1934-1935.

REPORT OF THE JOINT COMMITTEE OF THE R.I.B.A., C.P.R.I. AND INSTITUTE OF BUILDERS ON THE ELEVATION AND SITING OF BUILDINGS

On the recommendation of the Art Standing Committee and the Town Planning and Housing Committee the report of the Joint Committee on the Elevation and Siting of Buildings was approved and it was agreed to give it the widest possible publicity.

ADVISORY COMMITTEE ON TOWN AND COUNTRY PLANNING

In response to the invitation of the Minister of Health it was agreed to suggest the names of the following members for appointment upon the Advisory Committee which the Minister proposes to set up in connection with the operation of the Town and Country Planning Act :—Sir Raymond Unwin, F.R.I.B.A., Mr. R. Barry

Parker, J.P., F.R.I.B.A. Mr. W. Harding Thompson, M.C., F.R.I.B.A.; Mr. H. V. Lanchester, F.R.I.B.A.; Mr. E. Maxwell Fry, A.R.I.B.A.; Professor C. H. Reilly, O.B.E., F.R.I.B.A.

Christmas Holiday Lectures for Boys and Girls

The Council passed a very hearty vote of thanks to Mr. Eric R. Jarrett [*A.*] for the extremely successful and popular lectures which he gave during the recent Christmas holidays.

Extension of the Area of the Hampshire and Isle of Wight Architectural Association

The Council gave their formal approval to the proposal of the Hampshire and Isle of Wight Architectural Association to extend the area of the Association to include the Channel Islands.

Amendment of the R.I.B.A. Regulations for the Conduct of Architectural Competitions

The Council formally ratified the amendment of the Regulations for the conduct of Architectural Competitions which had previously been provisionally approved by them and particulars of which were published in the JOURNAL of 25 November.

The Institute of South African Architects and R.I.B.A. Publications

At the suggestion of Mr. F. W. Masey, President-in-Chief of the Institute of South African Architects, copies of certain R.I.B.A. publications have been presented to the four Provincial Institutes of the Institute of South African Architects for the use of members and students.

Loan of Model of Arch at Constitution Hill

On the recommendation of the Literature Standing Committee the Council have agreed to lend Professor Richardson, for the time being, the model of the arch at Constitution Hill for inclusion in the exhibition of models at University College.

Membership

The following members were elected:—

As Hon. Corresponding Member	1
As Fellows	9
As Associates	23
As Licentiates	9

Election 5 February 1934. Applications for membership were approved as follows:—

As Fellows	9 applications
As Associates	14 ,,
As Licentiates	31 ,,

Reinstatement. The following ex-members were reinstated:—

As Fellow:	Major Edwin Summerhayes.
As Associate:	Michael Calvert Sunter.
As Licentiates:	Albert Frederick Duke
	Leslie Charles Fairbairn.
	Richard Arthur Waite.

Resignations. The following resignations were accepted with regret:—

Ernest Tatham Richmond [*F.*].
John B. Bramwell [*A.*].
Mrs. Margaret Jean McEwen Thomson [*A.*].
Cecil William Rosher [*L.*].

Transfer to the Retired Members Class. The following members were transferred to the Retired Members Class:—

As Retired Fellows:	William Bevan.
	Henry Ascough Chapman.
	Dudley Newman.
	Alexander Nisbet Paterson.
As Retired Associates:	Arthur Milton Bisiker.
	William Brandreth Savidge.
As Retired Licentiates:	Percy Edgar Cyril Lain.
	Robert Thomas Miller.
	William Henry George.
	Arthur Floyd.

Obituary

WILLIAM GRELLIER [*F.*]

Mr. William Grellier was born in 1847 and died on 2 January 1934. From 1874 until 1930 he practised in London, first in Abchurch Lane, later in Queen Anne's Gate, and then in Lincoln's Inn Fields and Clement's Inn until the date of his retirement. He was articled to Mr. John Hudson and later worked in the office of Sir Horace Jones, City Architect, whom he helped in the designs of Smithfield Market. He also passed in 1878 the examination qualifying for the office of district surveyor. He joined his brother, the late Harvey M. Grellier, in 1874. He held the posts of surveyor to various estates, including the Crooke Ellim Estate, the Belsize Park, Lambeth and other estates. He was elected an Associate of the Institute in 1879 and a Fellow in 1888. From 1888 to 1931 he held the post of district surveyor in Clapham, and was also for some time on the Statutory Board of Examiners. Mr. Grellier was a very keen Mason, and also, being of Huguenot descent, took an active interest in various Huguenot societies, was a director of the French Hospital and a supporter of many French Protestant churches in London. He was a generous subscriber to very numerous charities.

ARCHIBALD NEILL [*F.*]

Mr. Archibald Neill was born in 1856 and died in November 1933. He received his architectural training in the office of the late Mr. William Hill, of Park Square, Leeds, and in 1878 started in personal practice in Leeds.

His principal architectural works included the Standard Assurance Buildings in City Square, Leeds; the Market Hall and shops, Market Street, and the Corporation Abattoir, Bury; Weston Manor, Otley; Millgarth Street Police Station, and the *Yorkshire Evening News* Printing Works and Offices, Leeds; Barclays Bank, Wakefield, and many other buildings. He was valuer to the Leeds Overseers from 1908 and was then made chief valuation officer to the Leeds Corporation in 1925 under the Rating and Valuation Act of 1925, a position which he held until 1929.

He was a well-known Freemason in Leeds for over 50 years, being superintendent of works (Yorks) and chairman of the Leeds Masonic Hall at his death.

CHARLES THOMAS TAYLOR [*A.*]

Mr. C. T. Taylor, who died on 2 January 1934, was born in 1863 and has been in practice in Oldham for the last forty years.

He was educated at Manchester Grammar School, and received his architectural training in the office of Messrs. Potts and Pickup, of Oldham. In 1892 he started in personal practice in Oldham, and was responsible for various public buildings, including the Waterhead Baths and the Robin Hill Baths, carried out for the Oldham Corporation; the Stanley Road Elementary School, Chadderton; the Wilmslow Cemetery and Registrars' Houses for the Wilmslow U.D. Council; the Central Conservative Club, Oldham; and Saint Mark's Church, Levenshulme, Manchester. In 1913 he took into partnership his chief assistant, Mr. Evan Roberts [*L.*], the firm then being called Taylor and Roberts, and in 1925 they were joined by Mr. Harold Bowman [*L.*], and practised jointly under the name of C. T. Taylor, Roberts and Bowman. Mr. E. Roberts and Mr. H. Bowman are now carrying on the practice.

The firm was responsible for the design and execution of a number of buildings, specialising particularly in hospital work. They were responsible for the Nurses' Home at Westhulme (Fever) Hospital and the Nurses' Home, Boundary Park Municipal Hospital, both for the Oldham Corporation; the entrance lodge and lay-out, new kitchen blocks, operating theatre, mortuary, children's hospital and other blocks at the Boundary Park Minicipal Hospital; the Public Institution for the Public Assistance Committee of the Oldham Corporation; the Higher Standard School for the Oldham Educational Committee; and alterations to the chancel and reredos, etc., at St. Mary's Church, Oldham.

Mr. Taylor became an Associate of the R.I.B.A. in 1888.

Allied Societies

ROYAL INCORPORATION OF ARCHITECTS IN SCOTLAND

At the monthly meeting of the Council of the Royal Incorporation of Architects in Scotland, held at 15 Rutland Square, Edinburgh—Mr. John Begg, Vice-President, F.R.I.A.S., President, in the Chair—it was agreed to extend an invitation to hold the British Architects' Conference, 1935, in Scotland under the auspices of the Glasgow Chapter. Congratulations were extended to the School of Architecture, Dundee, on its recognition for exemption from the R.I.B.A. Intermediate Examination. The Council dealt with matters relative to the revision of the General Conditions of Contract, specifications of imported timber and in painting contracts and armorial bearings on buildings. The following members were elected:—Messrs. G. L. Martin, Edinburgh; F. Lorne and T. S. Tait, Glasgow, as *Fellows;* Messrs. J. Broom, T. L. Dorrance, J. Drummond, Edinburgh; G. M. Cairns, Galashiels; W. O. McBain, H. S. Cattermoul, Glasgow, as *Associates;* and A. H. Wilson, Aberdeen; C. L. Matthew, Fraserburgh; G. L. Cadell, F. J. Connell, J. L. Cauldie, Edinburgh; C. C. Fraser, Dunfermline; J. L. Boak, Kirkcaldy; L. P. Knight, Lochwinnoch; James Gray, Leckie; Alex. Harvey, Bridge of Allan; R. J. Meredith and D. Sutherland, Stirling, as *Students.*

LIVERPOOL ARCHITECTURAL SOCIETY

At the General Meeting of the Society, held on 24 January, Mr F. E. Towndrow read a paper on "The Architect of the Future."

At the outset the lecturer essayed a definition of the term "architect," and after dismissing the various erroneous conceptions of the man-in-the-street, narrowed it down to "those people who have been trained in the planning and construction of buildings." Nowadays, he said, an architect had to be a combination of artist, business man, engineer, quantity surveyor and town planner, but he predicted that in the near future the architect will have to specialise in some direction or other. The penalty for neglecting to do this will be that he will find his work and livelihood usurped by people outside the profession—the engineer, financial expert, and others.

Accepting the need for specialisation, the great difficulty to-day is that architecture is so complex in its nature that no man can be master of all, or nearly all, its aspects. The solution, the lecturer thought, lies in the formation of groups and partnerships—a system which for the moment is much more popular in America than here. The individuality of the architect of the past and present is, he believes, already being broken down. This is to be seen in the numbers of specialists employed on the larger works, but the drawback here is that these specialists are not trained architects.

Mr. Towndrow predicted that more and more architects will be drawn into State, municipal and big business organisations.

He derived much encouragement from the fact that the present age is at last seeing the need for planning in advance. How much of this development can be attributed to the Russian Five-Year Plan he was not prepared to say. This new conception of planning, he believed, augured well for the future. He sincerely hoped that the planning would be in the hands of architects. The lecturer thought it was quite probable that the term "architect" would fall into disuse and be superseded by "planner."

NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS

The annual meeting of the Norfolk and Norwich Association of Architects was held at the Suckling House, Norwich, on 19 January, 33 members being present. The chair was occupied by the President, Mr. Cecil Upcher, F.R.I.B.A.

The Officers and Council for 1934–5 were elected as follows:—*President:* E. W. B. Scott [*F.*]; *Vice-Presidents:* J. O. Bond [*F.*], H. C. W. Blyth [*L.*]; *Ex-President:* C. Upcher [*F.*]; *Hon. Editor,* T. G. Scott [*F.*]; *Hon. Secretary:* E. H. Skipper [*F.*]; *Council:* G. Cotman [*F.*], S. J. Wearing [*F.*], F. H. Swindells [*F.*]; *Associate Member of Council:* H. J. T. Gowen; *Hon. Auditor:* C. H. Dann, A.R.I.B.A.

The annual report and balance sheet were adopted.

The President in his address gave an account of the work of the Council, Allied Societies Conference and Committees at the R.I.B.A., describing typical meetings and explaining so far as possible something of the great amount of work which is being done in the interests of architecture and architects.

The representatives on various sub-committees and other bodies reported on the work of the year. These included the architecture classes at Norwich School of Art by Mr. C. H. Dann, the East Norfolk Regional Town Planning Panel by the Hon. Secretary, the Norwich Society by Mr. Stanley Wearing, the Caistor excavations by Mr. Theodore Scott and the Norfolk Branch of the C.P.R.E. by Mr. Humphrey Boardman.

ANNUAL REPORT OF THE COUNCIL

The total membership of the Association on 31 December was 97, against 95 last year.

The annual meeting was held on 20 January 1933 at Curat House. Mr. C. Upcher, the President, presided and reports of the meeting and of the President's address are printed in the Year Book. Ordinary general meetings were held as follows:—

Mr. G. Cotman [*F.*], "Architecture in Danzic"; Mr. H. J. T. Gowen, "Inns and their Signs" (lantern illustrations); Mr. Humphrey Boardman [*A*], "Norfolk Reed Thatching" (lantern illustrations). As in previous years there was a meeting for members only held at No. 5 The Close by invitation of the President and Mrs. Upcher. Mr. J. O. Bond introduced the subject of "More Difficulties." Two suppers were held jointly with members of the Master Builders' Federation. Eleven council meetings were held. One public lecture was given by Mr. W. Aumonier on "Modern Sculpture." In connection with the Norwich "Spend for Employment" campaign organised by Rotary, this Association arranged a visit by Mr. Stanley C. Ramsey, F.R.I.B.A., who addressed Rotarians on the subject of "Reckless Saving."

Other matters dealt with in the report included references to the prizes given by the Association for architectural examinations at the School of Art and Technical College; the Advisory Panel to the Norfolk (East Central) Joint Town Planning Committee; the foundation of a branch of the C.P.R.E., and the cordial relations between the Association and the Norwich Corporation.

Membership Lists

ELECTION OF MEMBERS

In accordance with the terms of Bye-laws 10 and 11, the following candidates for membership were elected at the Council Meeting held on Monday, 5 February 1934.

AS FELLOWS (9)

ARMSTRONG: EDWARD WILLIAM [*A.* 1920].
BARGMAN: ROBERT FREDERICK [*A.* 1912], Dorking.
JOHNSON: HENRY ARTHUR [*A.* 1927], Doncaster.
QUICK: NORMAN DENNIS [*A.* 1921], Guildford.
WILLIAMS: GEOFFREY HYDE, M.C., M.T.P.I. [*A.* 1909], Windsor.

and the following Licentiates who have passed the qualifying Examination:—

CROCKER: SYDNEY RHYS, Swansea.
DIXON: ROBERT STANLEY, B.Arch.(Lvpl.), Guildford.
THOMAS: CAPTAIN BASIL WALTER, M.C.

and the following Licentiate who is qualified under Section IV Clause 4 (c) (ii) of the Supplemental Charter of 1925:—

OSWALD: HAROLD, J.P., Newcastle-upon-Tyne.

AS ASSOCIATES (14)

BRANDON-JONES: NOEL, B.A.(Arch.) [Passed five years' course at the Bartlett School of Architecture, University of London. Exempted from Final Examination], Berkhamsted.

CAHILL: THOMAS JOSEPH, B.A.(Arch.) [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], Newcastle-on-Tyne.

CROOKES: PHILIP CHARLES IRWIN [Passed five years' course at the School of Architecture, University College, Auckland. Exempted from Final Examination], Auckland, New Zealand.

DOWLING: EDWARD THORNE [Passed five years' course at the Architectural Association. Exempted from Final Examination].

HALSTEAD: HAYDEN ALBERT EDWARD [Passed five years' course at the School of Architecture, Robert Gordon's Colleges, Aberdeen. Exempted from Final Examination], Aberdeen.

HEBELER: BERNARD ADAM [Passed five years' course at the Architectural Association. Exempted from Final Examination].

IRVINE: ALEXANDER MURDOCH [Passed five years' course at the School of Architecture, Robert Gordon's Colleges, Aberdeen. Exempted from Final Examination], Insch, Aberdeenshire.

LISCOMBE: LEONARD FARRINGTON [Passed qualifying examination approved by the Board of Architectural Education of the Royal Australian Institute of Architects. Exempted from Final Examination].

MINSON: STEWART WILLIAM [Final].

MOULD: JOHN STUART [Final].

O'FARRELL: EDGAR CHARLES, B.A.Hons.(Arch.) [Passed five years' course at the Bartlett School of Architecture, University of London. Exempted from Final Examination].

ROBERTS: GLYN, Dip.Arch.(Lvpl.) [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], Liverpool.

TATAM: REGINALD [Final].

TWEMLOW: WILFRED JOHN [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], Newton-le-Willows, Lancashire.

AS LICENTIATES (30)

BROWNE: STANLEY HERBERT.
CANNON: EDWIN, Tavistock.
COOK: GEORGE LESTER, East Looe, Cornwall.
COOPER: ERNEST CHASE, Shanklin.
CROLL: VICTOR EDWARD.
FEURTADO: WESTLEY YORKE, Kingston, Jamaica.
FLETCHER: ALEC GEORGE, Cardiff.
FLETCHER: HERBERT WILLIAM, Cardiff.
FORD: WALTER HENRY.
GRIFFITHS: EDWIN DAYDON.
HARRISON: ARTHUR, Stockton-on-Tees.
HAYWOOD: DOUGLAS ARCHIBALD.
KEEBLE: HARRY LEONARD, P.A.S.I.
LEE: EDWARD PERCIVAL.
LEWIS: THOMAS WILLIAM, Carmarthen.
LLEWELLYN: THOMAS ELVET ERNEST, Cardiff.
MCNAIR: ALLAN STEWART, Stirling.
MATTHEW: ALEXANDER EDWARD.
NANJI: K. VIRJI, Nairobi.
OSPALAK: DAVID.
PARKER: OLIVER, Exeter.
PRIESTLEY: EDWIN.
ROBERTS: ARTHUR STANLEY.
SEYMOUR: MONOD T., Cardiff.
TAGGART: WILLIAM DAVID REDMOND, Belfast.
TOLLEY: GEORGE.
VIDEAN: JOHN ALLEN.
WALLACE: JAMES, Cardiff.
WEBB: OSBORNE V., Cardiff.
WOODIN: WALTER EDGAR.

APPLICATIONS FOR MEMBERSHIP

ELECTION: 5 MARCH 1934

In accordance with the terms of Bye-laws 10 and 11 an election of candidates for membership will take place at the Council Meeting to be held on Monday, 5 March 1934. The names and addresses of the candidates, with the names of their proposers, found by the Council to be eligible and qualified in accordance with the Charter and Bye-laws, are herewith published for the information of members. Notice of any objection or other communication respecting them must be sent to the Secretary R.I.B.A. not later than Tuesday, 20 February 1934.

AS FELLOWS (9)

FRITCHLEY: GEORGE BOWEN [*A.* 1921], 12 Mission Row, Calcutta. Proposed by H. V. Lanchester, T. A. Lodge and applying for nomination by the Council under the provisions of Bye-law 3 (d).

HANNAFORD: LEONARD GORDON [*A.* 1920], Town Hall, Leicester; 178 London Road, Leicester. Proposed by Sir Arnold Thornely, Harold G. Cherry and H. L. Thornely.

JENKINSON: JOHN MANSELL [*A.* 1909], Imperial Chambers, 18 Norfolk Row, Sheffield; "Stoneygate," Rundle Road, Sheffield. Proposed by Charles Matthew Hadfield, James R. Wigfull and J. Lancashire.

KIRBY: STUART CAMERON [*A.* 1923], 1A Duke Street, Manchester Square, W.1. Proposed by Robert Atkinson, Lionel G. Pearson and J. Murray Easton.

MACRAE: EBENEZER JAMES [*A.* 1914], City Architect's Office, City Chambers, Edinburgh. Proposed by John Wilson, T. F. Maclennan and James A. Arnott.

WELSH: STEPHEN [*A.* 1921], 17 Taptonville Road, Sheffield; School of Architecture, University of Sheffield. Proposed by J. Lancashire, Edwd. M. Gibbs and Charles Matthew Hadfield,

and the following Licentiates who have passed the qualifying Examination:—

BALLANTYNE: ROBERT CARRUTHERS, 11 Queensgate, Inverness; Ardarroch, Inverness. Proposed by J. Alistair Ross, W. J Taylor and Alex. F. Mackenzie.

COUVES: LEONARD JAMES, Carliol House, Newcastle-on-Tyne; "The Briggiss," North Avenue, Gosforth, Newcastle-on-Tyne. Proposed by Sir John J. Burnet, W. Lee Clarke and Robert Atkinson.

VERGER: EDWARD ARTHUR, County Hall, Lewes; 68 Wilbury Road, Hove. Proposed by W. H. Robinson, A. C. Bunch and Gilbert H. Lovegrove.

AS ASSOCIATES (98)

ALLEN: FREDERIC GLENLYN [Passed five years' course at the Welsh School of Architecture, The Technical College, Cardiff. Exempted from Final Examination], 18 Heathfield Place, Cardiff. Proposed by T. Alwyn Lloyd, Harry Teather and Percy Thomas.

ARTHUR: MISS KATHLEEN HUTTON [Passed five years' course at the Glasgow School of Architecture. Exempted from Final Examination], Glentore, Airdrie, Scotland. Proposed by T. Harold Hughes, Andrew Balfour and Col. J. Maurice Arthur.

ASHCROFT: WILLIAM ROBERT [Passed five years' course at the School of Architecture, Edinburgh College of Art. Exempted from Final Examination], c/o Smith, 33 Spottiswoode Street, Edinburgh. Proposed by John Begg, John Jerdan and W. J. Walker Todd.

BACON: CLARENCE [Final], 18 Deepdale Street, Sutton-in-Ashfield. Proposed by F. W. C. Gregory and applying for nomination by Council under the provisions of Bye-law 3 (d).

BARRETT: HARRY [Special Examination], c/o A. G. Bond, Esq., M.A., 115 Gower Street, W.C.1. Proposed by A. C. A. Norman, Alex. G. Bond and A. Southcombe Parker.

BATES: BERTRAM HAROLD [Final], 87 Alliance Avenue, Hull. Proposed by Frederick J. Horth, H. Andrew and G. Dudley Harbron.

BENJAMIN: MISS ROSE ELISABETH [Passed five years' course at the Architectural Association. Exempted from Final Examination], 30 Hocroft Road, N.W.2. Proposed by Howard Robertson, John Grey and W. Harding Thompson.

BENT: JAMES AUSTEN [Final], "Mayfield," Springhead, near Oldham. Proposed by Alex. G. Bond, Isaac Taylor and John Swarbrick.

BETTS: CYRIL [Final], "Xanthia," Valley Road, Derby. Proposed by George H. Widdows, H. V. Hague and H. Tatham Sudbury.

BORNAT: CHARLES [Passed five years' course at the Bartlett School of Architecture, University of London. Exempted from Final Examination], 401 Upper Richmond Road, S.W.15. Proposed by Professor A. E. Richardon, L. Stuart Stanley and Matthew J. Dawson.

BRADLEY-BARKER: ROGER BEVAN [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], 169 Melrose Avenue, Cricklewood, N.W.2. Proposed by Professor Lionel B. Budden, Edward R. F. Cole and applying for nomination by the Council under the provisions of Bye-law 3 (d).

BRAUN: HUGH STANLEY [Final], 64 Gayton Road, Harrow-on-the-Hill. Proposed by Darcy Braddell, A. H. Moberly and J. Alan Slater.

BRODRICK: PERCY FRANK [Final], 128 Tolworth Road, Surbiton, Surrey. Proposed by Henry A. Douglass, Joseph Addison and W. Walcot.

BROWN: COLIN [Final], 37 Fountain Street, Nelson, Lancs. Applying for nomination by the Council under the provisions of Bye-law 3 (d).

BROWNING: JOHN ALEXANDER, Dip.Arch. (Glas.) [Passed five years' course at the Glasgow School of Architecture. Exempted from Final Examination], 95 Great Western Road, Glasgow, C.4. Proposed by T. Harold Hughes, William J. Smith and Geo. A. Boswell.

BULLIVANT: ROBERT ANDREW [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], South View, Stockport Road, Altrincham, Cheshire. Proposed by Fred. Thorpe, Thomas Taylor and Ernest Simister.

BYRAM: LESLIE BRAMLEY [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], "Grasscroft," Hardhorn Road, Poulton-le-Fylde. Proposed by Francis L. Lumb, J. C. Robinson and Halstead Best.

CARROLL: MISS KATHLEEN MARY [Final], Carroll's Drift, Salvington, Worthing. Proposed by G. Mackenzie Trench, L. Stuart Stanley and Professor A. E. Richardson.

CHANTREY: GEORGE HERBERT BARTON [Final], c/o 60 Leonard Street, Hull, Yorks. Proposed by Frederick J. Horth, H. Andrew and G. Dudley Harbron.

CLARK: FREDERICK VICTOR WATSON [Passed five years' course at the Department of Architecture, University of Sheffield. Exempted from Final Examination], "Ashdale," Owston Ferry, via Doncaster. Proposed by J. Lancashire, Charles Matthew Hadfield and W. G. Buck.

COOPER: ARTHUR WELLESLEY [Final], 52 Haselden Road, Snapethorpe, Wakefield. Proposed by Joseph Addison, L. Stuart Stanley and Col. Jos. Spain.

DAY: BENJAMIN IVOR [Final], 9 St. Martins Road, Knowle, Bristol 4. Proposed by G. C. Lawrence, Sir George H. Oatley and G. D. Gordon Hake.

DEERIES: JOHN GRAY [Passed five years' course at the Architectural Association. Exempted from Final Examination], c/o Dominion Bank, 3 King William Street, E.C.1. Proposed by Howard Robertson, John Grey and J. R. Leathart.

DELEUSE: JOHN EDWARD [Final], 60 Millbrook Road, Stockwell, S.W.9. Proposed by H. F. Murrell, R. Mountford Pigott and applying for nomination by the Council under the provisions of Bye-law 3 (d).

DOE: HAROLD EDMUND [Final], 150 Effra Road, Wimbledon, S.W.19. Proposed by Edward Percy Archer, Basil Oliver and Sidney H. Loweth.

DUMVILLE: MAURICE ROLAND [Final], "Carysfort," 6 Eastern Road, N.2. Proposed by Thos. E. Scott, Herbert J. Axten and Joseph Emberton.

DUNTON: JACK GEORGE [Final], 66 Conway Road, Cardiff. Proposed by Percy Thomas, Harry Teather and T. Alwyn Lloyd.

EDWARDS: EDWARD GERALD WALTON [Final], "Little Barnfield," Newlands Avenue, Radlett, Herts. Proposed by C. Bouton Smith, Alex. G. Bond and W. F. C. Holden.

EVANS: CYRIL GEORGE [Final], 26 Elm Green, Aylesbury, Bucks. Proposed by R. T. Longden and the President and Hon. Secretary of the Berks, Bucks and Oxon Architectural Association under the provisions of Bye-law 3 (a).

FARDELL: GEOFFREY CHARLES [Final], Cromer, Lancaster Avenue, Hitchin. Proposed by S. B. Russell, Basil Oliver and Robert Bennett.

FERGUSON: CHARLES WILLIAM BANNISTER [Passed five years' course at the Architectural Association. Exempted from Final Examination], 86 Lancaster Gate, W.2. Proposed by Howard Robertson, John Grey and J. R. Leathart.

FIRMIN: ERIC HENRY [Final], 2 Fountains Road, Luton. Proposed by A. Alban H. Scott, Major Basil C. Deacon and Alan G. Brace.

FISK: WALTER WILLIAM [Passed five years' course at the Architectural Association. Exempted from Final Examination], 10 Copenhagen Street, Islington, N.1. Proposed by Howard Robertson, C. H. James and J. Ambrose Dartnall.

GAMBLE: ALAN DAVID [Passed five years' course at the Architectural Association. Exempted from Final Examination], "Gwernant," Pittville Circus Road, Cheltenham. Proposed by John Grey, J. Murray Easton and Fred Kempster.

GASSON: ALFRED STANLEY, P.A.S.I. [Final], 757A London Road, Westcliff-on-Sea, Essex. Proposed by C. Ernest Elcock, F. Sutcliffe and Niel Martin-Kaye.

GOFFEY: ALBERT EDWARD [Final], 436 East Park Road, Leicester. Proposed by George Nott, J. Stockdale Harrison and William Keay.

GRAHAM: KEVIN [Final], 1 Aikrigg Villas, Burneside Road, Kendal. Proposed by S. Wilkinson, Charles B. Pearson and Capt. J. Spedding Curwen.

GREENWOOD: SYDNEY [Final], 20 Hawthorne Avenue, Monton, Eccles. Proposed by Ernest G. Heathcote, Francis Jones and J. Hubert Worthington.

GREGSON: SYDNEY [Special Examination], "Keighley," Wisbech Road, March, Cambs. Proposed by Albert Herbert and applying for nomination by the Council under the provisions of Bye-law 3 (d).

HAIGH: MARTIN WILLIAM [Passed five years' course at the Architectural Association. Exempted from Final Examination], Cornerways, Garden Road, Bromley, Kent. Proposed by John Grey, L. H. Bucknell and J. Murray Easton.

HALL: MISS WINSOME ALICE, B.Arch. [Secured approved qualification in the Dominions. Exempted from Final Examination], "Indi," James Street, Mosman, Sydney, Australia. Proposed by Professor Leslie Wilkinson, B. J. Waterhouse and Arthur Wm. Anderson.

HANSOM: CHARLES FRANCIS RICHARD [Passed five years' course at the Department of Architecture, University of Sheffield. Exempted from Final Examination], 46 Kenwood Road, Sheffield. Proposed by Charles Matthew Hadfield, Chas. B. Flockton and W. G. Buck.

HARDWICK: JOHN [Final], Belmont Grove, Rawdon, near Leeds. Proposed by Joseph Addison, H. S. Chorley and B. R. Gribbon.

HARLEY-SMITH: RONALD [Final], c/o Messrs. Calvert, Jessop and Gleave, 8 St. Peters Church Walk, Nottingham. Proposed by Charles H. Calvert, John Woollatt and F. W. C. Gregory.

HAWARD: BIRKIN [Final], "Broad Beech," Belstead Road, Ipswich. Proposed by Professor A. E. Richardson, L. Stuart Stanley and Matthew J. Dawson.

HAY: GEORGE STANLEY [Final], Kingsley, 29 Wickham Chase, West Wickham, Kent. Proposed by L. G. Ekins, S. W. Ackroyd and Sir Banister Fletcher.

HEMMINGS: WILLIAM JAMES [Final], 50 Shakespeare Street, Leicester. Proposed by George Nott, Henry F. Traylen and F. J. Lenton.

HERNU: RAYMOND ARTHUR JOSEPH [Passed five years' course at the Architectural Association. Exempted from Final Examination], Heath Cottage, Limpsfield, Surrey. Proposed by Gilbert H. Jenkins, Arthur Keen and Howard Robertson.

HOPKINSON: ALBERT CYRIL [Passed five years' course at the Department of Architecture, University of Sheffield. Exempted from Final Examination], 84 Clough Road, Rotherham. Proposed by Charles Matthew Hadfield, J. Lancashire and W. G. Buck.

HOWARD: WILLIAM FREDERICK [Final], 55 Millbank, Westminster, S.W.1. Proposed by F. Winton Newman, Henry V. Ashley and Max R. Hofler.

ISRAEL: LAWRENCE [Final], 4 Carlisle Road, Brondesbury Park, N.W.6. Proposed by Alex. G. Bond, Arthur J. Davis and Chas. H. Gage.

JAMES: MISS MARGARET JOHNSTON [Passed five years' course at the School of Architecture, Edinburgh College of Art. Exempted from Final Examination], 25 Inverleith Terrace, Edinburgh. Proposed by John Begg, B. N. H. Orphoot and W. T. P. Bryce.

JARRATT: HERBERT STANLEY [Final], Penrhyn Lodge, Picton Road, Ramsgate. Proposed by A. Foster, Edgar Ranger and H. Campbell Ashenden.

JENSEN: ROLF ARTHUR, B.Arch. (Lvpl.) [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], 21 Denbigh Street, S.W.1. Proposed by Professor Lionel B. Budden, Edward R. F. Cole and applying for nomination by the Council under the provisions of Bye-law 3 (d).

JOHNSON: VICTOR LLOYD [Special Examination], 22 Farlow Road, S.W.15. Proposed by L. Stuart Stanley, Ernest Bates and Matthew J. Dawson.

JONES: ALBERT EDWARD [Passed five years' joint course at the Department of Architecture, Northern Polytechnic (London) and the Architectural Association. Exempted from Final Examination], 11 Manor Place, Paddington, W.2. Proposed by Thos. E. Scott, John Grey and Howard Robertson.

JONES: JOHN RHAGFYR, P.A.S.I. [Final], 31 Dartmouth Road, Chorlton-cum-Hardy, Manchester. Proposed by H. W. Cruickshank, H. T. Seward and John Swarbrick.

JUDD: KENNETH WILLIAM [Passed five years' joint course at the Department of Architecture, The Northern Polytechnic and the Architectural Association. Exempted from Final Examination], 17 Victoria Grove, Kensington, W.8. Proposed by Thos. E. Scott, H. St. John Harrison and A. Bulloch.

KILGOUR: STEWART [Passed five years' course at the School of Architecture, Robert Gordon's Colleges, Aberdeen. Exempted from Final Examination], 26 Beechgrove Place, Aberdeen. Proposed by James B. Nicol, R. Leslie Rollo and John G. Marr.

MCCOLL: SAMUEL [Final], 44 Lochfield Drive, Paisley. Proposed by H. Cook, Andrew Hamilton and William J. Smith.

MARSHALL: ARTHUR CECIL [Passed five years' course at the School of Architecture, University College, Auckland. Exempted from Final Examination], 28 Woodward Road, Mt. Albert, Auckland, New Zealand. Proposed by C. Reginald Ford, W. H. Gummer and W. Gray Young.

MARTIN: ROBERT HENRY [Passed five years' course at the Bartlett School of Architecture, University of London. Exempted from Final Examination], 5 Broadway, Beckenham, Kent. Proposed by Professor A. E. Richardson, Matthew J. Dawson and H. P. G. Maule.

MASON: GEORGE RONALD, B.Arch.(Lvpl.) [Passed five years' course at the Liverpool School of Architecture, University of Liverpool, Exempted from Final Examination], "Brocklesby," St. George's Road, Waterloo, Liverpool. Proposed by Professor Lionel B. Budden, L. H. Keay and Rupert Medcalf.

MASON: JOHN WILLIAM [Final], 92 Mount View Road, Stroud Green, N.4. Proposed by Professor A. E. Richardson, C. Lovett Gill and Matthew J. Dawson.

MAYNARD: MISS KATHLEEN IRENE [Final], 6 Stafford Terrace, Plymouth. Proposed by J. Leighton Fouracre, A. Southcombe Parker and A. C. A. Norman.

MOORE: CHARLES EDWARD [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], Public Works Department, Hong Kong. Proposed by Professor C. H. Reilly, Professor Lionel B. Budden and Edward R. F. Cole.

MUNRO: CHARLES [Final], 34 Sydenham Gardens, Belfast. Proposed by R. Ingleby Smith, R. S. Wilshere and Kendrick Edwards.

NEAVE: ALFRED HENRY [Final], 55 Fellows Road, Hampstead, N.W.3. Proposed by Chas. W. Clark, Walter Tapper and E. Guy Dawber.

PEAT: JOHN TREVOR WILLIAMS [Final], 116 Gnoll Park Road, Neath, Glam. Proposed by J. Herbert Jones, Charles S. Thomas and Percy Thomas.

POTTER: JOHN ALEXANDER, B.Arch. [Passed five years' joint course at the Birmingham School of Architecture, and the Department of Architecture, University of Sheffield. Exempted from Final Examination], 21 Market Place, Derby. Proposed by George H. Widdows, Charles H. Aslin and Percy H. Currey.

POTTER: ROBERT JAMES [Final], 71 St. Mark's Road, Salisbury. Proposed by George A. Mitchell, L. H. Bucknell and W. H. R. Blacking.

POWICKE: MISS ANNA ELIZABETH [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], 97 Holywell, Oxford. Proposed by R. A. Cordingley, Hubert Worthington and Dr. Percy S. Worthington.

PRIEST: ALFRED LLEWELLYN [Final], 8 East Crescent, East Dene, Rotherham, Yorks. Proposed by Percy Thomas, Morgan Willmott and T. Alwyn Lloyd.

PRIOR: JAMES FREDERICK [Final], 1 Queen Anne's Grove, Ealing, W.5. Proposed by Thos. E. Scott, Gerald Unsworth and H. St. John Harrison.

RATCLIFFE: BERIC FORD [Final], Willow Brook, Woodlands Avenue, Whitefield, Lancs. Proposed by Philip Barker, H. W. Cruickshank and H. T. Seward.

REDGRAVE: CLAUDE FRANCIS [Passed five years' course at the Birmingham School of Architecture. Exempted from Final Examination], 29 Stoneleigh Avenue, Coventry. Proposed by George Drysdale, J. B. Surman and A. C. Bunch.

RENNIE: ROBERT [Final], 104 Argyle Road, Saltcoats, Ayrshire. Proposed by A. G. Henderson, John Keppie and John Watson.

ROSE: KENNETH [Final], "Aingarth," Wood's Moor Lane, Davenport, Stockport. Proposed by Arthur Brocklehurst, Isaac Taylor and C. Gustave Agate.

SALTER: EDWARD THOMAS [Final], Barharrows, Swanley Bar Lane, Potter's Bar, Middlesex. Proposed by A. Bulloch, W. Braxton Sinclair and Col. M. K. Matthews.

SANDERS: MAURICE [Final], 153 Cambridge Road, E.1. Proposed by Thos. E. Scott, Laurence Kennard and C. B. Smith.

SEABRIGHT: JOHN EATON [Final], 2 Selbourne Road West, Worcester. Proposed by Alex. G. Bond, Hurley Robinson and George Drysdale.

SEIFERT: RUBIN [Passed five years' course at the Bartlett School of Architecture. Exempted from Final Examination], 293 Green Lanes, Manor House, N.4. Proposed by L. Stuart Stanley, C. Lovett Gill and Matthew J. Dawson.

SHERWIN: ULRICH ALEXANDER [Final], 27 Tradescant Road, S.W.8. Proposed by W. Curtis Green, Maxwell Ayrton and F. Winton Newman.

SMITH: PETER CHANDLER, B.A. [Final], 86 Porchester Terrace, W.2. Proposed by Sir Giles Gilbert Scott, H. C. Hughes and A. Gilbert Scott.

SPEAKMAN: HARRY GREENOUGH [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], The Walmsleys, Leigh, Lancs. Proposed by Ernest Prestwich, J. Hubert Worthington and C. Gustave Agate.

SUDBURY: FRANCIS TATHAM [Final], Wayside, Longfield Lane, Ilkeston. Proposed by George H. Widdows, F. W. C. Gregory and H. Tatham Sudbury.

TAYLOR: HARRY [Passed five years' course at the School of Architecture, Victoria University, Manchester. Exempted from Final Examination], 7 Falinge Fold, Rochdale, Lancs. Proposed by

Professor R. A. Cordingley and applying for nomination by the Council under the provisions of Bye-law 3 (d).

TIMMIS: GORDON JAMES, B.Arch.Lvpl. [Passed five years' course at the Liverpool School of Architecture, University of Liverpool. Exempted from Final Examination], 3 Alexandra Drive, Sefton Park, Liverpool 17. Proposed by Professor Lionel B. Budden, Edward R. F. Cole and Bernard A. Miller.

TODD: GEORGE RICHARD [Final], 9 Springfield Avenue, Maidstone, Kent. Proposed by W. H. Robinson, S. H. Loweth and Frank A. Broadhead.

WALDEN: RONALD PHILIP [Final], "Rotherfield," Rotherfield Road, Henley-on-Thames. Proposed by Maxwell Ayrton, W. Beswick and Leslie T. Moore.

WALLACE: NEIL STUART [Final], 13 Chatham Road, Darley Park, Old Trafford, Manchester 16. Proposed by John Knight, W. S. Beaumont and Isaac Taylor.

WARLAND: ALAN WILLIAM [Passed five years' course at the Architectural Association. Exempted from Final Examination], Kingsdown Rectory, near Sevenoaks, Kent. Proposed by G. E. Kendall, John Grey and Howard Robertson.

WILSON: WILLIAM [Passed five years' course at the School of Architecture, Edinburgh College of Art. Exempted from Final Examination], "Glencairn," Traquair Park West, Corstorphine, Edinburgh. Proposed by John Begg, John F. Matthew and John Jerdan.

WINTERBURN: THOMAS FRED [Final], 2 Redcliffe Gardens, Kensington, S.W.10. Proposed by Norman Culley, B. R. Gribbon and G. H. Foggitt.

WINWARD: FRED [Final], 32 Yarlside Road, Roose, Barrow-in-Furness. Proposed by J. A. Charles, D. Wynne Thomas and R. Hermon Crook.

WOMERSLEY: J. LEWIS [Final], 2 Redcliffe Gardens, Kensington, S.W.10. Proposed by Norman Culley, Captain Victor Bain and A. B. Knapp-Fisher.

WOOD: JAMES DOUGLAS [Final], Hawthorndene, Gordon Avenue, Stanmore, Middlesex. Proposed by C. H. James, Howard Robertson and Fred. Kempster.

WORMALD: ERIC [Final], 6 Lawnswood Gardens, Leeds 6. Proposed by Captain Victor Bain, F. L. Charlton and G. H. Foggitt.

AS LICENTIATES (11)

ANDERSON: WILLIAM ELLERY ELBERT, Bath Chambers, Bath Street, Cheltenham; "Morningside," Prestbury, Cheltenham. Proposed by J. Arnold Crush, J. Harold Gibbons and Harold S. Rogers.

ARMSTRONG: THOMAS FRANCIS, "Grasmere," Heathclose Road, Dartford, Kent. Proposed by G. Topham Forrest, E. P. Wheeler and W. T. Sadler.

BARRETT: NORMAN MIDGLEY, 67 Albert Road, Colne, Lancs; "Moorlands," Barnoldswick, near Colne. Proposed by Saml. Taylor and the President and Hon. Secretary of the Burnley District Society of Architects under the provisions of Bye-law 3 (a).

BEST: JAMES HERSCHELL, City Surveyor's Department, City Hall, Belfast; 78 Deerpark Road, Belfast. Proposed by J. G. Gamble, Thomas R. Eagar and R. H. Gibson.

CRABTREE: WILLIAM EDWARD, c/o Herbert H. Clough, Esq., Old Market Chambers, 13 Yorkshire Street, Rochdale; 23 Mayfair Gardens, Rochdale. Proposed by T. Townend and applying for nomination by the Council under the provisions of Bye-law 3 (d).

KENNEDY: RICHARD PERCIVAL, F.S.I., 111 Baker Street, W.1; 69 Cambridge Gardens, W.10. Proposed by Fred. J. Wills, Francis Lorne and W. E. Masters.

PARR: JOHN NOWELL, 42 Cranley Gardens, S.W.7, and Low Barn, Hercies Road, Billington, Middlesex. Proposed by W. M. Doddington, Sir Banister Fletcher and Christian C. T. Doll.

PEARCE: HENRY JOSEPH, Buildings Ordinance Office, Public Works Department, Hong Kong; 175 The Peak, Hong Kong; c/o Lloyds Bank, Weymouth. Proposed by H. W. Bird, Edward A. Ram and Ernest J. Brett.

REDDING: CYRIL NORMAN MERIDAN, Architect's Departmen, Anchor Brewery, Mile End Road, E.1; "Redwyn," 108 The Ridgeway, Chingford, Essex. Proposed by Dudley Newman and applying for nomination by the Council under the provisions of Bye-law 3 (d).

RITSON: JOHN HUNTRIS, "Monument House," Alfred Gelder Street, Hull; 15 Norwood Street, Scarborough. Proposed by G. Dudley Harbron and H. Andrew and applying for nomination by the Council under the provisions of Bye-law 3 (d).

ROBERTS: FREDERIC WILLIAM, "Ravensworth," 9 Heathwood Road, Cardiff. Proposed by W. James Nash, Henry A. Ellis and Charles S. Thomas.

TRESIZE: JOHN, c/o H. Campbell Ashenden, Esq., 23 Watling Street, Canterbury; Trevellas Cottage, South Street, Whitstable, Kent. Proposed by H. Campbell Ashenden and the President and Hon. Secretary of the South-Eastern Society of Architects under the provisions of Bye-law 3 (a).

R.I.B.A. PROBATIONERS

During the month of December 1933 the following were registered as Probationers of the Royal Institute:—

BAKER: JAMES HERBERT ALFRED, Brierley, Ash Road, Hadleigh, Essex.

BATT: BERTRAM BEAVER HOLLAND, 35 Jellicoe Avenue, Lincoln

CHAIKIN: ISAAC, 95 Sandringham Road, E.8.

COLES: RONALD HENRY, Quarry Hill Close, Sandal, Wakefield.

FLEMING: THOMAS LOUDON, 16 Ochil Street, Alloa, Clackmannanshire, Scotland.

GRAHAM: ALEXANDER, JNR., 9 South Street, Greenock, Scotland.

GRAY: RONALD PETER, 6 Brookfield Road, E.9.

HARGREAVES: THOMAS, 67 Albert Road, Blackpool, Lancs.

HERNU: RAYMOND ARTHUR JOSEPH, Heath Cottage, Limpsfield, Surrey.

KEY: PETER STUART, 123 Queen's Road, Richmond, Surrey.

KIRKHAM: JOHN KENNETH, "Kenwood" Shiphay Lane, Torquay, Devon.

MACKENZIE: ROBERT WALKER RANNIE, 11 Pitt Street, Edinburgh.

MCQUEEN: ALASTAIR, "Crofts," Dalbeattie, Scotland.

MARSH: PHILIP RENE, 262 King's Road, Chelsea, S.W.3.

MEGAW: ARTHUR HUBERT STANLEY, Arden, Fortwilliam Drive, Belfast, N. Ireland.

MICKLEWRIGHT: FREDERICK GEORGE, 30 Braidwood Road, Catford, S.E.6.

MILSON: FRANK GEORGE, 13 Leconfield Road, Canonbury, London, N.5.

PURNELL: NORMAN KEET, "Southview," Selcroft Road, Purley, Surrey.

SEIFERT: RUBIN, 295 Green Lanes, Manor House, London, N.4.

SIBTHORP: THOMAS, "Haroldene," 48 Edencourt Road, Streatham, S.W.16.

TOMBAZIS: EMANUEL GEORGE, 7 Victoria Circus, Dowanhill, Glasgow, W.2.

VINT: GEORGE BRAMWELL, 31 Highbury Quadrant, N.5.

VULLIAMY: JUSTIN EDWARD, 6 Millington Road, Cambridge.

WEST: REGINALD JOHN, 3 Bridgewood Road, Worcester Park, Surrey.

WESTON: ROSALEEN NANCY WILSON, Barlby Hall, Selby, Yorkshire.

WHITE: JOHN, 49 Queen's Road, Monkseaton, Northumberland.

Notices

THE SEVENTH GENERAL MEETING

The Seventh General Meeting of the Session 1933–34 will be held on Monday 5 March at 8 p.m., when Mr. W. R. Davidge [*F.*] will read a Paper on "Schemes for the Planning of London, Past and Present."

MUSICAL EVENING
MONDAY 19 FEBRUARY, 1934

A Musical Evening arranged by the Social Committee will be held in the R.I.B.A. Galleries on Monday 19 February at 8.15 p.m.

Admission will be by programme to be obtained on application to the Secretary R.I.B.A., price 2s. 6d. each. Light refreshments will be served. Full particulars of the programme will be found on page 372 of this issue of the JOURNAL.

INCLUSION IN BILLS OF QUANTITIES OF WORK TO BE EXECUTED BY LOCAL AUTHORITIES

The attention of the Council has again been called to the practice which obtains in some quarters of including in Bills of Quantities as items for the builders to price, work which can only be done by local authorities or public service companies—such as taking up and making good public roads and footways, sewer connections, and connections of water pipes and cables to main supplies. The effect of such procedure is that the local authorities or public service companies receive enquiries from several builders asking for estimates for the works in question, and it frequently happens that the authorities and companies concerned find themselves unable to pre-estimate exactly the cost of these services.

Members are asked to conform with the recommendation previously made by the Council, and to deal with such items as provisional sums. These sums would be based on the reply to the enquiry made to the local authority or public service company by either the architect or the surveyor. The adjustment of these provisional sums at the conclusion of the contract to accord with the amounts actually charged removes the element of risk and uncertainty which must inevitably attend the method under which the contractor is asked to estimate for these works.

THE LICENTIATESHIP OF THE R.I.B.A. AND THE ARCHITECTS (REGISTRATION) ACT

The Council have decided that after 31 December 1933 no applications for admission to membership as Licentiates will be considered unless the candidates' names have been entered on the Register of Registered Architects.

THE USE OF THE TITLES "CHARTERED ARCHITECT" AND "REGISTERED ARCHITECT"

Now that the Registration Act is in force, the Council have been asked to give advice with regard to the best way to use the title "Registered Architect" by members of the R.I.B.A. who have been placed on the Register, and who already have the right to use the designation "Chartered Architect."

The Council recommend that members of the R.I.B.A. who have been registered should use the designation "Chartered and Registered Architect."

CESSATION OF MEMBERSHIP

As a result of disciplinary action under By-law 24, Mr. Gordon Wallet Jackson has ceased to be a member of the R.I.B.A.

Under the provisions of Bye-law 21 the following have ceased to be members of the R.I.B.A.:—

As FELLOW:

Herbert Read.

As ASSOCIATES:

Frank Allen Moore.
William Edward Young.

As LICENTIATES:

Frederick Ernest Adams.
Thomas Bilbow.
Horace George Charles Brewer.
James Percy Crosby.
Albert Gorton.
Henry Walter Way Lovegrove.
Lockhart Fraser Miller.
Ernest Keene Oliver.
Frank Morley Pidsley.
Henry George Boswood Ridges.
Arthur George Spencer.
Vamanrao Viththalrao Vadnerkar.
Ernest George Wilks.

Competitions

BELFAST: NEW SANATORIUM BUILDINGS

The Belfast Education Committee are proposing to hold a competition for new Sanatorium buildings at Whiteabbey and Graymount and Mr. R. S. Wilshere [*F.*] has been appointed to act as Assessor. Conditions are not yet available.

LEICESTER: EXTENSION TO FREEMASONS' HALL. LIMITED COMPETITION

The Masonic Hall Committee, Leicester, invite practising architects who are subscribing members to any Lodge in the province of Leicestershire and Rutland to submit, in competition, designs for additions and alterations to the Masonic Hall, London Road, Leicester.

Assessor: Mr. Arthur H. Hind [*F.*].

Premiums: 50, 30 and 20 guineas.

Last day for receiving designs: 24 March 1934.

Conditions of the competition may be obtained from the Secretary, Masonic Hall Committee, 80 London Road, Leicester.

SLOUGH: NEW COUNCIL OFFICES

The Slough Urban District Council have decided to hold an open competition in connection with the new Council Offices which are to be erected at Salt Hill. Premiums of £150, £100 and £50 will be offered and Mr. H. S. Goodhart-Rendel [*F.*] has been appointed by the President of the R.I.B.A. to act as Assessor. Conditions have not yet been drawn up.

SWINDON: PROPOSED TOWN HALL EXTENSION

The Town Council of Swindon propose to hold a competition for Extensions to the present Town Hall, and Mr. A. B. Knapp-Fisher [*F.*] has been appointed by the President of the R.I.B.A. to act as Assessor. Conditions have not yet been drawn up.

COMPETITION FOR THE LAY-OUT OF AN "IDEAL VILLAGE"

The proprietors of the *Builder* invite suggestions for the general lay-out of an Ideal Village on garden city lines, suitable for a population of about 5,000 persons.

Assessor: Mr. D. Barclay Niven [*F.*].

Premiums: £50, £15 and £10.

Last day for receiving entries: 29 May 1934.

Last day for questions: 20 February 1934.

Full particulars of the competition were published in the *Builder* for 19 January 1934.

FAÇADE IN GRANITE

The Cornish Quarry Masters' Association invite architects to submit, in competition, designs for the façade in granite to an Electricity Departments' Showrooms and Offices.

Assessors: Mr. C. Lovett Gill [*F.*], President of the Architectural Association.

Mr. A. B. Knapp-Fisher [*F.*].

Mr. Howard Robertson [*F.*],

and two representatives of the Cornish Quarry Masters' Association.

Premium: £50.

Last day for receiving designs: 26 March 1934.

Conditions of the competition may be obtained on application to the Secretary, Architectural Association, 34-36 Bedford Square, London, W.C.1.

COMPETITION RESULT

BEXHILL: ENTERTAINMENTS HALL

1. Messrs. Erich Mendelsohn and Serge Chermayeff [*F.*].
2. Messrs. J. W. Haswell [*A.*] and G. H. Shepherd [*A.*].
3. Messrs. P. G. Freeman [*A.*], and W. Crabtree [*A.*].

Recommended for Special Merit:—
Messrs. James Burford [*A.*], and Marshall Sisson [*A.*].
Mr. P. Lingwood [*A.*], Wakefield.

Members' Column

NEW PARTNERSHIP

MR. G. PERCY PRATT, J.P., A.R.I.B.A., of 174 High Street, Acton, W.3, has entered into partnership with Mr. W. Stanley Blount, L.R.I.B.A., A.M.I.Struc.E., who has been associated with him for a number of years, as from Monday, 5 February 1934. The name of the firm will be Percy Pratt and Blount, Chartered and Registered Architects and Surveyors, and the practice will be continued on from the above address. Telephone No. ACOrn 0860.

NEW PRACTICE

MR. J. G. BATLEY, F.R.I.B.A., has started practice at 22 Essex Street, Strand, W.C.2. Tel. No.: Temple Bar 6912.

PARTNERSHIP WANTED

A.R.I.B.A., 20 years' experience domestic, ecclesiastical and commercial work, London and country, desires Partnership, or post as assistant with a view to Partnership, in established London practice. Capital available if required. Apply Box No. 2234, c/o Secretary, R.I.B.A.

PARTNERSHIP VACANT

AN OPPORTUNITY occurs in a well-known old-established North Country architectural practice for a Half Partner aged 27 or over. Applicant should be experienced in industrial, commercial and municipal work, competition experience being an added asset. Premium required. Write Box 2414, c/o Secretary, R.I.B.A.

Minutes VIII

SESSION 1933–1934

At the Sixth General Meeting of the Session 1933-1934, held on Monday, 5 February 1934, at 8 p.m.

Sir Giles Gilbert Scott, R.A., President, in the Chair.

The attendance book was signed by 31 Fellows (including 13 members of Council), 30 Associates (including 2 members of Council), 6 Licentiates, 4 Hon. Associates and a large number of visitors.

The Minutes of the Fifth General Meeting, held on 22 January 1934, having been published in the JOURNAL, were taken as read, confirmed and signed as correct.

The Hon. Secretary announced the decease of:—

Horatio Kelson Bromhead, who, at the time of his decease, was the oldest in continuity of active membership of the Royal Institute. Mr. Bromhead was elected an Associate in 1872 and a Fellow in 1902. He was a Past-President of the Glasgow Institute of Architects and represented that body on the Council of the R.I.B.A. from 1902 to 1904.

Bernard Preston Gaymer, elected Associate 1914, Fellow 1927.

William Scorer, elected Associate 1881.

Benjamin Sagar Dean, elected Licentiate 1911 and transferred to the Retired Licentiates Class in 1932.

William Henry George, elected Licentiate 1910 and transferred to the Retired Licentiates Class in 1933.

And it was Resolved that the regrets of the Institute for their loss be entered on the Minutes and that a message of sympathy and condolence be conveyed to their relatives.

The following members attending for the first time since their election were formally admitted by the President:—

A. W. Blomfield [*F.*]	G. W. Bamfield [*Student*]
John Gedge [*A.*]	F. H. Brown ,,
F. H. Headley [*A.*]	A. B. Carter ,,
W. Claude Poppleton [*A.*]	H. W. G. Hawkes ,,
A. W. F. Sterling [*A.*]	K. le G. Hoskins ,,
R. Vaughan [*A.*]	Percy Imelmann ,,
Bernard Widdows [*L.*]	K. N. Jarvis ,,
	Ruston H. Pastakia ,,
	J. Ardern Powell ,,
	S. Turner ,,
	Arthur W. Walls ,,
	L. A. Wills ,,

Mr. Kenneth Clark, M.A. [*Hon. A.*], Director of the National Gallery, having read a paper on "Architectural Backgrounds in Italian Painting," a discussion ensued, and on the motion of Mr. George Clausen, R.A., seconded by Mr. W. T. Monnington, A.R.A., a vote of thanks was passed to Mr. Kenneth Clark by acclamation and was briefly responded to.

The proceedings closed at 9.50 p.m.

A.B.S. INSURANCE DEPARTMENT
HOUSE PURCHASE SCHEME.
(For property in Great Britain only.)
REVISED TERMS.

The A.B.S. Insurance Department is able, through the services of a leading Assurance Office, to assist an *Architect or his Client* in securing the capital for the purchase of a house on the following terms:—

AMOUNT OF LOAN.

75 per cent.

of the value of the property as certified by the Surveyor employed by the Office.

RATE OF INTEREST.

5 per cent. gross (which, at the present rate of income tax, represents 3¾ per cent. nett).

LEGAL COSTS AND SURVEY FEE,

also the amount of the first quarter's premium on the Endowment Assurance referred to below, are advanced in addition to the normal loan. If the loan is continued for more than fifteen years the *Survey and Legal Costs will be refunded* to the Borrower on repayment of the loan.

REPAYMENT.

By means of an Endowment Assurance which discharges the loan at the end of 15 or 20 years or at the *earlier death* of the Borrower.

SPECIAL CONCESSION TO ARCHITECTS.

In the case of houses in course of erection, it has been arranged that provided the Plan and Specification have been approved by the Surveyor acting for the Office, ONE-HALF of the amount of the loan agreed upon will be advanced on a certificate from the Office's Surveyor that the walls of the house are erected and the roof on and covered in to his satisfaction.

N.B.—Loans will not be undertaken under this scheme upon:

(*a*) Property the value of which is not sufficient to warrant a loan of at least £500 or of which the value exceeds £2,500;
(*b*) Property of the bungalow type;
(*c*) Property not in the sole occupation of the Borrower.

If a quotation is required, kindly send details of your age next birthday, approximate value of house and its exact situation, to the Secretary, A.B.S. Insurance Department, 9 Conduit Street, London, W.1. Telephone: Mayfair 0434.

R.I.B.A. JOURNAL

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